Operation

190ES/210ES™ Electric Airless Sprayer
Pulvérisateurs électriques Airless 190ES/210ES™
Pulverizadores eléctricos sin aire 190ES/210ES™

311988C
ENG FRA SPA

- For portable spray application of architectural paints and coatings -
- Pour l'application de peintures et revêtements architecturaux avec un appreil mobile -
- Para aplicaciones de pulverización portátiles de pinturas y revestimientos con fines arquitectónicos -

190ES Model: 261825 / 210ES Model: 261830

Maximum Working Pressure: 3000 psi (20.7 MPa, 207 bar)

	Important Safety Instructions Read all warnings and instructions in this manual. Save these instructions.	**Instructions de sécurité importantes** Lire toutes les mises en garde et instructions de ce manuel. Sauvegarder ces intructions.	**Instrucciones importantes de seguridad** lea todas las advertencias e instrucciones de este manual. Guarde las instructionnes.

Related Manuals

311990

312830 English **312831 Français** **312832 Español**

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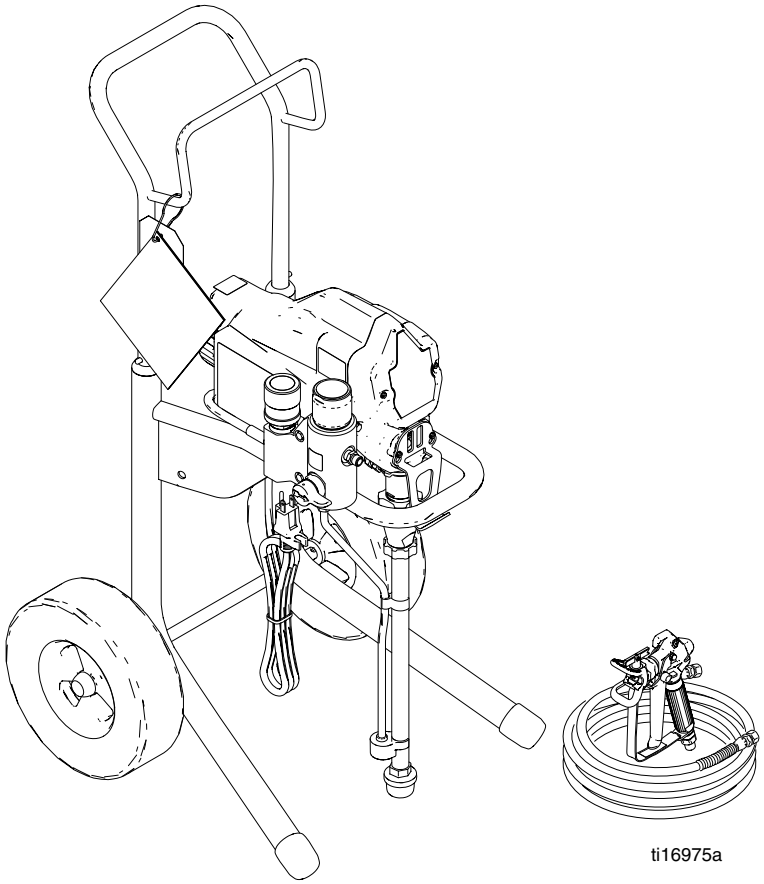

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C.J. Spray, Inc.
6270 Claude Way E
Inver Grove Heights, MN 55076
1-888-CJSPRAY
(888-257-7729)

PROVEN QUALITY. LEADING TECHNOLOGY.

HO03

Warning

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Sprayer generates sparks. When flammable liquid is used in or near the sprayer or for flushing or cleaning, keep sprayer at least 20 feet (6 m) away from explosive vapors.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
- Ground equipment and conductive objects in work area. Read **Grounding** instructions.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

ELECTRIC SHOCK HAZARD

Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power cord before servicing equipment.
- Use only grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on sprayer and extension cords.
- Do not expose to rain. Store indoors.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Engage trigger lock when not spraying.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

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WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. Read **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. Read **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine Graco replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your Graco distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or overbend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.
- Do not operate the equipment when fatigued or under the influence of drugs or alcohol.

PRESSURIZED ALUMINUM PARTS HAZARD

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDS's to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eye wear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

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Mise en garde

Les mises en gardes suivantes sont des mises en garde de sécurité relatives à la configuration, utilisation, mise à la terre, maintenance et réparation de ce matériel. D'autres mises en garde plus spécifiques figurent dans ce manuel aux endroits concernés. Les symboles figurant dans ce manuel font référence à ces mises en garde générales. Quand vous voyez l'un de ces symboles dans le manuel, reportez-vous à ces pages où ce risque spécifique est décrit.

MISE EN GARDE

DANGERS D'INCENDIE ET D'EXPLOSION

Les vapeurs inflammables de solvant et de peinture sur le lieu de travail peuvent prendre feu ou exploser. Pour prévenir un incendie ou une explosion:

- N'utiliser l'équipement que dans des locaux bien ventilés.
- Supprimer toutes les source de feu, telles que les veilleuses, cigarettes, lampes électriques portatives et bâches plastique (risque de décharge d'électricité statique).
- Les pulvérisateurs produisent des étincelles. En cas d'utilisation de liquides inflammables dans ou près du pulvérisateur ou encore pour rincer ou nettoyer, tenir le pulvérisateur à un minimum de 20 pieds (6 m) des vapeurs explosives.
- Veiller à débarrasser la zone de travail de tout résidu, comme les solvants, les chiffons et l'essence.
- Ne pas brancher ni débrancher de cordons d'alimentation électrique ni actionner de commutateur marche-arrêt ou de lumière en présence de vapeurs inflammables.
- Raccorder à la terre le matériel et les objets conducteurs du site. Voir les instructions de **Mise à la terre**.
- Si l'on remarque la moindre étincelle d'électricité statique ou si l'on ressent une décharge électrique, **arrêter le travail immédiatement.** Ne pas utiliser le matériel tant que le problème n'a pas été identifié et résolu.
- La présence d'un extincteur est obligatoire dans la zone de travail.

DANGER DE DÉCHARGE ÉLECTRIQUE

Une mauvaise mise à la terre, un mauvais réglage ou une mauvaise utilisation du système peut provoquer une décharge électrique.

- Mettre hors tension et débrancher le câble d'alimentation avant de procéder à un entretien du matériel.
- N'utiliser que des prises électriques reliées à la terre.
- N'utiliser que des rallonges à 3 conducteurs.
- S'assurer que les fiches de terre du pulvérisateur et des rallonges sont intactes.
- Ne pas exposer à la pluie. Entreposer à l'intérieur.

DANGERS D'INJECTIONS

Le produit s'échappant à haute pression du pistolet, d'une fuite sur le flexible ou d'un composant défectueux risque de transpercer la peau. La blessure peut avoir l'aspect d'une simple coupure, mais il s'agit en fait d'une blessure sérieuse pouvant entraîner une amputation. **Consulter immédiatement un médecin en vue d'une intervention chirurgicale.**

- Ne pas diriger le pistolet sur quelqu'un ou une partie quelconque du corps.
- Ne pas mettre la main devant la buse de pulvérisation.
- Ne jamais colmater ou dévier les fuites avec la main, le corps, un gant ou un chiffon.
- Ne pas pulvériser sans garde-buse ni sous-garde.
- Verrouiller la gâchette à chaque arrêt de la pulvérisation.
- Suivre la **Procédure de décompression** de ce manuel à chaque interruption de la pulvérisation et avant le nettoyage, la vérification ou l'entretien du matériel.

MISE EN GARDE

DANGER EN CAS DE MAUVAISE UTILISATION DE L'ÉQUIPEMENT

Toute mauvaise utilisation du matériel peut provoquer des blessures graves, voire mortelles.

- Ne pas dépasser la pression ou température de service maximum spécifiée de l'élément le plus faible du système. Voir les **Caractéristiques techniques** de tous les manuels de l'appareil.
- Utiliser des produits et solvants compatibles avec les pièces en contact avec le produit. Voir les **Caractéristiques techniques** de tous les manuels d'équipement. Pour plus d'informations sur votre produit, demandez la fiche de sécurité produits à votre distributeur ou revendeur.
- Vérifier l'équipement tous les jours. Réparer ou remplacer immédiatement les pièces usées ou endommagées par des pièces de rechange d'origine Graco.
- Ne pas modifier cet équipement.
- N'utiliser ce matériel que pour l'usage auquel il est destiné. Pour plus de renseignements appelez votre distributeur Graco.
- Écarter les flexibles et câbles électriques des zones de circulation, des bords coupants, des pièces en mouvement et des surfaces chaudes.
- Ne pas plier ni trop cintrer les flexibles ni les utiliser pour tirer l'appareil.
- Se conformer à toutes les règles de sécurité applicables.
- Tenir les enfants et animaux à l'écart du site de travail.
- Ne pas utiliser l'appareil si l'on est fatigué ou sous l'influence de drogue ou d'alcool.

RISQUES DUS AUX PIÈCES EN ALUMINIUM SOUS PRESSION

N'utiliser ni 1,1,1-trichloréthane, ni chlorure de méthylène, ni solvants à base d'hydrocarbures halogénés, ni produits renfermant de tels solvants dans un appareil sous pression en aluminium. L'utilisation de ces produit peut déclencher une violente réaction chimique et une casse du matériel et provoquer ainsi de graves dommages corporels et matériels pouvant entraîner la mort.

DANGERS PRESENTES PAR LES PRODUITS OU VAPEURS TOXIQUES

Les produits ou vapeurs toxiques peuvent causer de graves blessures et entraîner la mort en cas de projection dans les yeux ou sur la peau, en cas d'inhalation ou d'ingestion.

- Lire la fiche de sécurité produit (MSDS) pour prendre connaissance des risques spécifiques aux produits utilisés.
- Stocker les produits dangereux dans des récipients homologués et les éliminer conformément à la réglementation en vigueur.

EQUIPEMENT DE PROTECTION DU PERSONNEL

Il est impératif que le personnel porte un équipement de protection approprié quand il travaille ou se trouve dans la zone de fonctionnement de l'installation pour éviter des blessures graves telles que des lésions oculaires, inhalation de fumées toxiques, brûlures et perte de l'ouïe notamment. Cet équipement comprend ce qui suit, la liste n'étant pas exhaustive:

- Lunettes de sécurité
- Le port de vêtements de sécurité et d'un respirateur est conseillé par le fabricant de produit et de solvant
- Gants
- Casque anti-bruit

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Advertencias

A continuación se ofrecen advertencias en general relacionadas con la seguridad de la puesta en marcha, utilización, conexión a tierra, mantenimiento y reparación de este equipo. Además, puede encontrar advertencias adicionales a lo largo de este manual siempre que sea pertinente. Los símbolos que aparecen en el texto del manual se refieren a estas advertencias generales. Cuando vea estos símbolos en el manual, consulte estas páginas para obtener una descripción del riesgo específico.

ADVERTENCIAS

PELIGRO DE INCENDIOS Y EXPLOSIONES

Los vapores inflamables, como los vapores de disolvente o de pintura, en la zona de trabajo pueden incendiarse o explotar. Para evitar un incendio o explosión:

- Utilice el equipo únicamente en áreas bien ventiladas.
- Elimine toda fuente de ignición, tales como las luces piloto, los cigarrillos, las linternas eléctricas y las cubiertas de plástico (arcos estáticos potenciales).
- El pulverizador genera chispas. Cuando utilice líquidos inflamables cerca de, o en el pulverizador, o cuando lo lave o limpie, mantenga el pulverizador al menos a 6 m (20 pies) de distancia de los vapores explosivos.
- Mantenga limpia la zona de trabajo, sin disolventes, trapos o gasolina.
- No enchufe ni desenchufe cables de alimentación ni apague ni encienda las luces en el área de pulverización.
- Conecte a tierra el equipo y los objetos conductores de la zona de trabajo. Vea las instrucciones de **Conexión a tierra**.
- Si se aprecia la formación de electricidad estática durante el uso de este equipo, **deje de trabajar inmediatamente.** No utilice el sistema hasta haber identificado y corregido el problema.
- Guarde un extintor de incendios en la zona de trabajo.

PELIGRO DE DESCARGA ELÉCTRICA

Una conexión a tierra, montaje o utilización incorrectos del sistema puede causar descargas eléctricas.

- Apague y desconecte la alimentación eléctrica antes de desconectar el equipo.
- Utilice únicamente tomas eléctricas conectadas a tierra.
- Utilice únicamente cables de extensión de 3 hilos.
- Compruebe que los terminales de conexión a tierra del pulverizador y de los cables de extensión están intactas.
- Proteja de la lluvia. Guárdelo en un recinto cerrado.

PELIGRO DE INYECCIÓN A TRAVÉS DE LA PIEL

El fluido a alta presión procedente de la pistola, fugas de la manguera o componentes rotos penetrarán en la piel. La inyección del líquido puede tener la apariencia de un simple corte, pero se trata de una herida grave que puede conducir a la amputación. **Consiga inmediatamente tratamiento quirúrgico.**

- No apunte nunca la pistola hacia alguien o alguna parte del cuerpo.
- No coloque la mano sobre la boquilla de pulverización.
- No intente bloquear ni desviar posibles fugas con la mano, el cuerpo, los guantes o con un trapo.
- No pulverice sin el portaboquillas y el seguro del gatillo.
- Enganche el seguro del gatillo cuando no esté pulverizando.
- Siga el **Procedimiento de descompresión** de este manual, cuando deje de pulverizar y antes de limpiar, revisar o reparar el equipo.

ADVERTENCIAS

PELIGROS DEBIDOS A LA UTILIZACIÓN INCORRECTA DEL EQUIPO

El uso incorrecto puede causar la muerte o heridas graves.

- No exceda la presión máxima de trabajo o la temperatura del componente con menor valor nominal del sistema. Consulte la sección **Características técnicas** de todos los manuales del equipo.
- Utilice líquidos y disolventes compatibles con las piezas húmedas del equipo. Consulte las **Características técnicas** en todos los manuales que acompañan al equipo. Para obtener información completa sobre su material, pida la MSDS al distribuidor o al minorista.
- Revise el equipo a diario. Repare o cambie inmediatamente las piezas desgastadas o deterioradas únicamente con piezas de repuesto genuinas de Graco.
- No altere ni modifique el equipo.
- Utilice el equipo únicamente para el fin para el que ha sido destinado. Si desea información, póngase en contacto con su distribuidor Graco.
- Desvíe las mangueras de zonas de tráfico intenso, de curvas pronunciadas, de piezas movibles y superficies calientes.
- No retuerza ni doble las mangueras, ni las utilice para arrastrar el equipo.
- Respete todas las normas relativas a la seguridad.
- Mantenga a los niños y a los animales lejos de la zona de trabajo.
- No utilice el equipo si está cansado o bajo los efectos de medicamentos o del alcohol.

PELIGRO DE PIEZAS DE ALUMINIO A PRESIÓN

No utilice 1,1,1 tricloroetano, cloruro de metileno y otros disolventes de hidrocarburos halogenados o productos que contengan dichos disolventes con equipos de aluminio presurizados. Esas sustancias podrían provocar peligrosas reacciones químicas y ruptura del equipo, y causar la muerte, lesiones graves y daños materiales.

PELIGRO DE VAPORES O LÍQUIDOS TÓXICOS

Los líquidos o los vapores tóxicos pueden provocar serios daños o incluso la muerte si entran en contacto con los ojos o la piel, se inhalan o se ingieren.

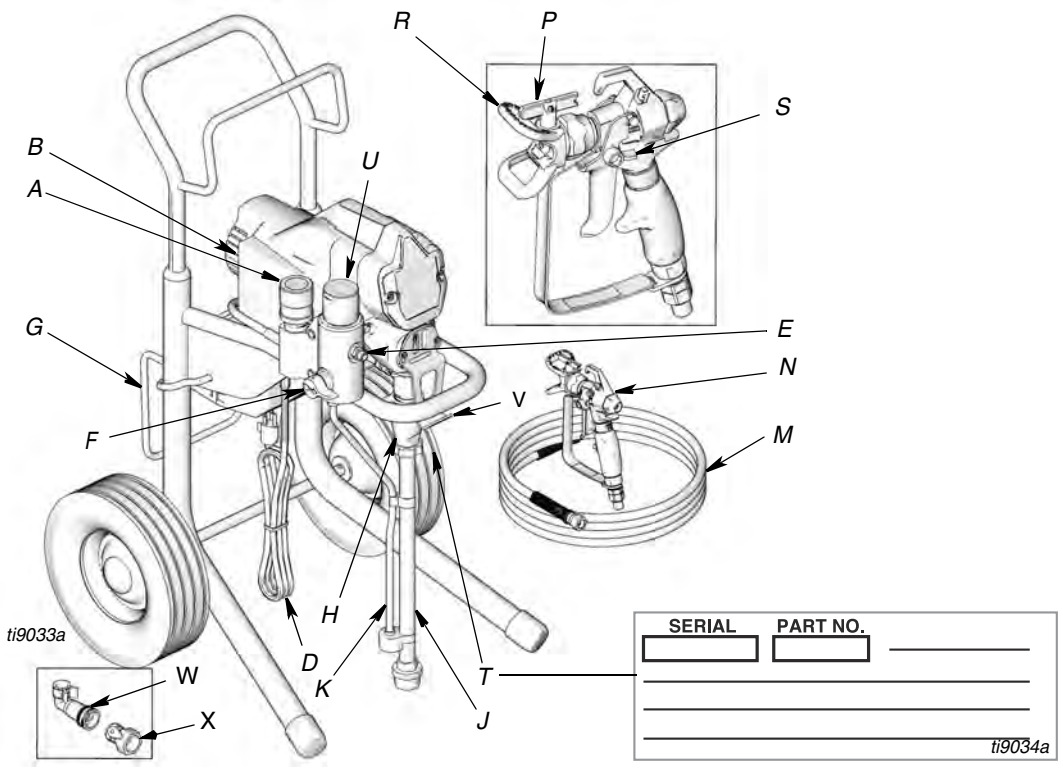
- Lea la Hoja de datos de seguridad del material (MSDS) para conocer los peligros específicos de los líquidos que esté utilizando.
- Guarde los fluidos peligrosos en un envase adecuado que haya sido aprobado. Proceda a su evacuación siguiendo las directrices pertinentes.

EQUIPO DE PROTECCIÓN PERSONAL

Debe utilizar equipo de protección adecuado cuando trabaje, revise o esté en la zona de funcionamiento del equipo, con el fin de protegerse contra la posibilidad de lesionarse gravemente, incluyendo lesiones oculares, la inhalación de vapores tóxicos, quemaduras o la pérdida auditiva. Este equipo incluye, pero no está limitado a:

- Gafas de protección
- Ropas protectoras y un respirador, tal como recomiendan los fabricantes del fluido y del disolvente
- Guantes
- Protección auditiva

Component Identification / Identification des composants / Identificación de los componentes



	English	Français	Español
A	Pressure Control	Régulation de pression	Control de la presión
B	ON/OFF switch	Bouton MARCHE/ARRÊT	Interruptor de encendido/apagado
D	Power Cord	Cordon électrique	Cable de alimentación
E	Fluid Outlet	Sortie produit	Salida de fluido
F	Prime Valve	Vanne d'amorçage	Válvula de cebado
G	Kick Stand (210ES Series A)	Support de coup-de-pied (210 ES Serie A)	Soporte del retroceso (210 ES Serie A)
H	Pump	Pompe	Bomba
J	Suction Tube	Tube d'aspiration	Tubo de aspiración
K	Drain Hose	Flexible de vidange	Manguera de drenaje
M	Fluid Hose	Flexible produit	Manguera de fluido
N	Gun	Pistolet	Pistola
P	Tip	Buse	Boquilla
R	Guard	Garde	Portaboquillas
S	Trigger Safety Lock	Verrou de sécurité de la gâchette	Cierre de seguridad del gatillo
T	Serial Number ID Label	Étiquette d'identification avec numéro de série	Etiqueta de identificación del número de serie
U	Filter Cap	Capot du filtre	Tapa del filtro
V	Pail Hook	Systeme d'accrochage du seau	Colgador para el bidón
W	Power Flush Adapter	Raccord de rinçage forcé	Acoplamiento de la lavado eléctrico
X	Shutoff Valve	la robinet d'arrete	La válvula de cierre

Pressure Relief Procedure / Procédure de décompression / Procedimiento de descompresión

English	Français	Español
Follow this Pressure Relief Procedure whenever you stop spraying and before cleaning, checking, servicing, or transporting equipment.	Observer cette Procédure de décompression, à chaque arrêt de la pulvérisation et avant tout nettoyage, contrôle, entretien ou manutention du matériel.	Siga el Procedimiento de descompresión, cuando deje de pulverizar y antes de limpiar, revisar, reparar o transportar el equipo.

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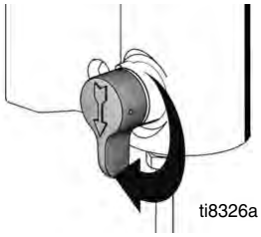

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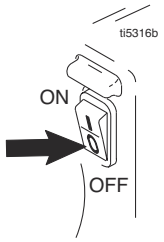

English

1 Turn pressure control to lowest pressure.	2 Hold gun against side of grounded metal flushing pail. Trigger gun to relieve pressure.	3 Turn prime valve down. If you suspect spray tip or hose is clogged or pressure is not fully relieved, VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure. Then loosen completely.	4 Turn power switch OFF, if unit is being shut down or will be left unattended.

Français

1 Régler la régulation de pression au niveau le plus bas.	2 Appuyer le pistolet contre la paroi d'un seau de rinçage métallique mis à la terre. Actionner le pistolet pour relâcher la pression.	3 Tourner la vanne d'amorçage vers le bas. Si vous pensez que la buse de pulvérisation ou le flexible est bouché ou que la pression n'a pas été complètement relâchée après les opérations ci-dessus, desserrer TRÈS LENTEMENT l'écrou de fixation du garde-buse ou le raccord du flexible pour relâcher la pression, puis desserrer complètement.	4 Mettre le commutateur M/A sur ARRÊT pour arrêter l'appareil ou si on le laisse sans surveillance.

Español

1 Ajuste el dispositivo de control de presión al valor más bajo.	2 Mantenga la pistola contra el lateral de una lata metálica de lavado conectada a tierra. Dispare la pistola para aliviar la presión.	3 Gire la válvula de cebado hacia abajo. Si se sospecha que la boquilla de pulverización o la manguera están obstruidas, o que no se ha liberado completamente la presión, afloje MUY LENTAMENTE la tuerca de retención del portaboquillas o el acoplamiento del extremo de la manguera para liberar la presión. Después afloje completamente.	4 Apague el interruptor de potencia, si desea apagar la unidad o la va a dejar desatendida.

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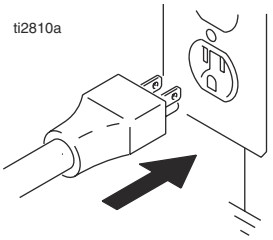
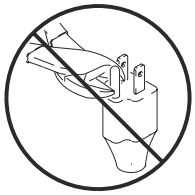
Grounding / Mise à la terre / Conexión a tierra

English	Français	Español
The sprayer must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.	Ce pulvérisateur doit être raccordé à la terre. La mise à la terre réduit les risques d'électricité statique et de décharge électrique grâce à un fil permettant au courant de s'échapper en cas d'accumulation d'électricité statique ou de court-circuit.	Este pulverizador debe estar conectado a tierra. La conexión a tierra reduce el riesgo de descargas eléctricas y estáticas al proporcionar un cable por donde puede escapar la corriente eléctrica debida a la acumulación estática o en caso de que haya un cortocircuito.





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English

- The sprayer cord includes a grounding wire with an appropriate grounding contact.
- The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.
- Do not modify plug! If it will not fit in outlet, have grounded outlet installed by a qualified electrician. Do not use an adapter.

Français

- Le cordon d'alimentation possède un fil de terre relié à un contact de mise à la terre approprié.
- Cette fiche doit être enfichée dans une prise montée et reliée à la terre conformément à la réglementation locale.
- Ne pas modifier le connecteur! S'il ne rentre pas dans la prise, faire installer une prise avec mise à la terre par un électricien qualifié. Ne pas utiliser d'adaptateur.

Español

- El cable del pulverizador incluye un hilo de conexión a tierra con el contacto de conexión a tierra adecuado.
- La clavija debe estar enchufada en una toma correctamente instalada y conectada a tierra de acuerdo con los códigos y decretos locales.
- ¡No modifique la clavija suministrada! Si no encaja en la toma eléctrica, pida a un electricista cualificado que instale una toma de corriente conectada a tierra. No utilice un adaptador.

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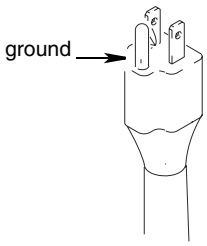
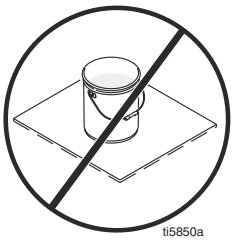
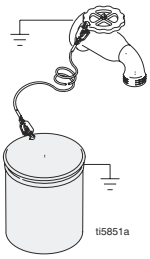
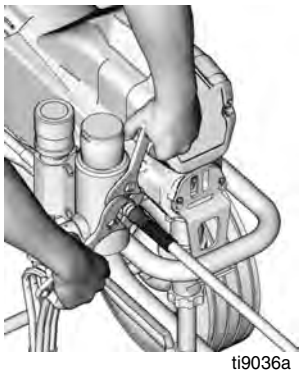
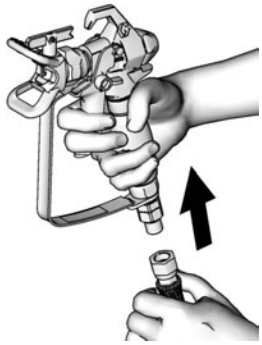
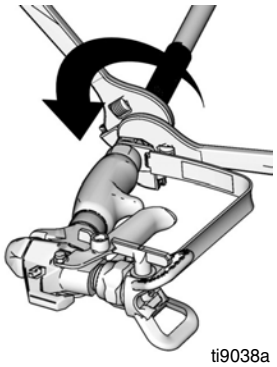
		 120 volt plug	
English	**Power Requirements**	**Extension Cords**	
	• 120V units require 100 - 120 Vac, 60 Hz, 11A, 1 phase.	• Use an extension cord with an undamaged ground contact.	• If an extension cord is necessary, use a 3-wire, 12 AWG (2.5 mm^2) minimum.
Français	**Spécification électrique**	**Rallonges**	
	• Les appareils de 120V fonctionnent en 100 - 120 Vca, 60 Hz, 11A, 1 phase.	• Utiliser un cordon d'alimentation électrique muni d'un contact de mise à la terre en bon état.	• Si une rallonge est nécessaire, utiliser un fil à 3 conducteurs, de 12 AWG (2,5 mm^2) minimum.
Español	**Requisitos eléctricos**	**Cables de extensión**	
	• 120V requieren 100 - 120 Vca, 60 Hz, 11A, monofásico.	• Utilice un cable de extensión con un contacto en buen estado.	• Si fuera necesario utilizar un cable de extensión, utilice un cable de 3 hilos, 12 AWG (2,5 mm^2) como mínimo.

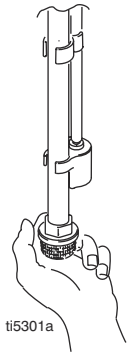
CJ Spray™

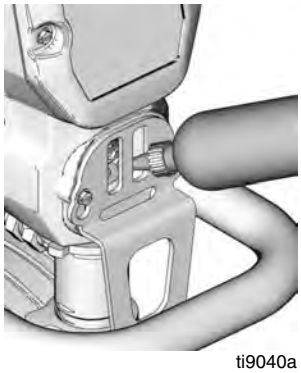
	 ti5850a	 ti5851a	ti9035a
English	**Pails**		
• **Solvent and oil/based fluids:** follow local code. Use only conductive metal pails, placed on a grounded surface such as concrete.	• Do not place pail on a nonconductive surface such as paper or cardboard which interrupts grounding continuity.	• **Grounding a metal pail:** connect a ground wire to the pail by clamping one end to pail and other end to a true earth ground such as a metal water pipe.	• **To maintain grounding continuity when flushing or relieving pressure:** hold metal part of spray gun firmly to side of a grounded metal pail. Then trigger gun.
Français	**Seaux**		
• **Solvants et fluides à l'huile/à l'eau:** Respecter la réglementation locale. N'utiliser que des seaux métalliques conducteurs placés sur une surface reliée à la terre, sur du béton par exemple.	• Ne pas poser le seau sur une surface non conductrice telle que du papier ou du carton car cela aurait pour effet d'interrompre la continuité de la mise à la terre.	• **Mise à la terre du seau métallique:** brancher un fil de terre sur le seau en pinçant une extrémité sur le seau et l'autre sur une véritable terre, comme une conduite d'eau en métal par exemple.	• **Pour maintenir la continuité de la mise à la terre pendant le rinçage ou la décompression:** appuyer une partie métallique du pistolet contre le côté d'un seau métallique relié à la terre, puis appuyer sur la gâchette du pistolet.
Español	**Bidones**		
• **Disolvente y fluidos a base de aceite:** de acuerdo con las normas locales. Utilice sólo latas metálicas conductoras, colocadas sobre una superficie de tipo cemento.	• No coloque el bidón sobre una superficie no conductora, como papel o cartón, que pueda interrumpir la continuidad de la conexión a tierra.	• **Conexión a tierra del bidón metálico:** conecte un cable de conexión a tierra al bidón sujetando un extremo al bidón y el otro extremo a una tierra verdadera, por ej. una tubería de agua del metal.	• **Para mantener la continuidad de la puesta a tierra durante la limpieza o la liberación de la presión:** sujete firmemente una pieza metálica de la pistola de pulverización contra el borde de una lata metálica con conexión a tierra. Después dispare la pistola.

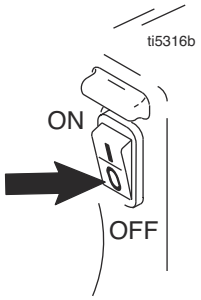
CJ Spray™

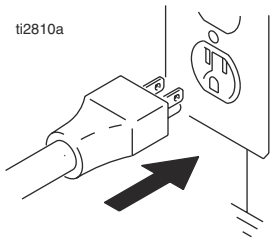
Setup / Installation / Configuración

 ti9036a	 ti9037a	 ti9038a	ti9039a
English			
1 Connect Graco airless hose to sprayer. Tighten securely.	2 Connect other end of hose to gun.	3 Tighten securely.	4 Remove tip guard.
Français			
1 Brancher un flexible Graco type airless sur le pulvérisateur. Bien serrer.	2 Brancher l'autre extrémité du flexible sur le pistolet.	3 Bien serrer.	4 Retirer le garde-buse.
Español			
1 Conecte la manguera sin aire Graco al pulverizador. Apriete firmemente.	2 Conecte el otro extremo de la manguera a la pistola.	3 Apriete firmemente.	4 Retire el portaboquillas.









English

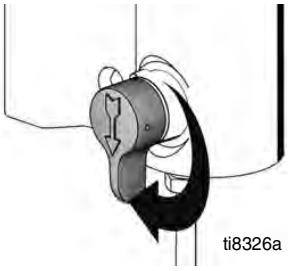
5	Check inlet strainer for clogs and debris.	6	Fill throat packing nut with TSL to prevent premature packing wear. Do this each time you spray.	7	Turn power OFF.	8	Plug power supply cord into a properly grounded electrical outlet.

Français

5	Vérifier si la crépine d'entrée est bouchée ou contient des impuretés.	6	Remplir l'écrou du presse-étoupe de liquide TSL pour empêcher une usure prématurée. Le faire à chaque pulvérisation.	7	COUPER l'alimentation électrique.	8	Brancher le cordon d'alimentation sur une prise électrique correctement raccordée à la terre.

Español

5	Revise el elemento filtrante de entrada en busca de obstrucciones o suciedad.	6	Llene la tuerca prensaestopas del cuello con TSL para evitar el desgaste prematuro de las empaquetaduras. Haga esto cada vez que utilice el pulverizador.	7	Apague el suministro de energía.	8	Enchufe el cable de alimentación eléctrica a una toma eléctrica con conexión a tierra.



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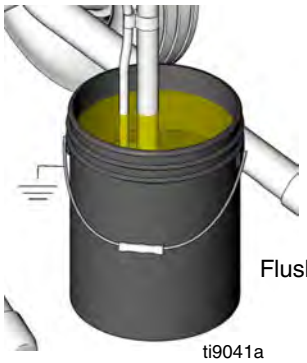


ti9041a

English

9 Turn prime valve down.	10 Place siphon tube set in grounded metal pail partially filled with flushing fluid. See **Grounding**, page 10. Do steps 1- 6 of **Startup**, page 16, to flush out storage oil shipped in sprayer. Use water to flush water-based paint or mineral spirits to flush oil-based paint and storage oil.

Français

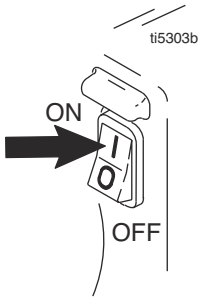
9 Tourner la vanne d'amorçage vers le bas.	10 Plonger le tuyau d'aspiration dans un seau métallique mis à la terre rempli partiellement de fluide de rinçage. Voir **Mise à la terre**, page 10. Effectuer les opérations 1- 6 du **Démarrage**, page 16, pour purger l'huile de stockage contenue dans le pulvérisateur. Utiliser de l'eau pour purger les peintures à l'eau et du white spirit pour les peintures à l'huile et l'huile de stockage.

Español

9 Gire la válvula de cebado hacia abajo.	10 Coloque el conjunto de tubos de aspiración en un recipiente metálico conectado a tierra y parcialmente lleno con líquido de lavado. Vea **Conexión a tierra**, página 10. Realice los pasos 1- 6 de la **Puesta en marcha**, página 16, para eliminar el aceite de almacenamiento que se envía con el pulverizador. Utilice agua para eliminar las pinturas acuosas y alcoholes minerales para las pinturas a base de aceite y el aceite de almacenamiento.

Startup / Démarrage / Puesta en marcha

ti8324a



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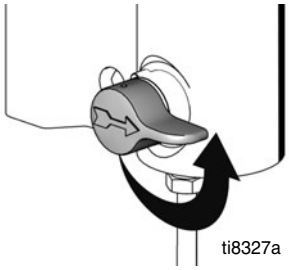

ti8327a

English

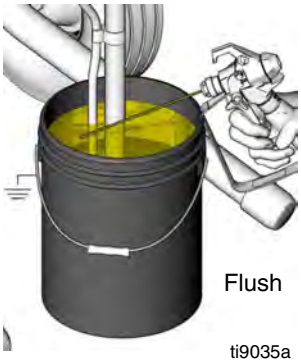
1	Turn pressure control to lowest pressure.	2	Turn power **ON**.	3	Increase pressure 1/4 turn to start motor. Allow fluid to circulate through drain tube for 15 seconds.	4	Turn prime valve horizontal.Take spray gun trigger safety OFF.

Français

1	Régler la régulation de pression au niveau le plus bas.	2	Mettre en **MARCHE**.	3	Augmenter la pression de 1/4 de tour pour démarrer le moteur. Faire circuler le produit pendant 15 secondes dans le tuyau de vidange.	4	Mettre la vanne d'amorçage en position horizontale. DEVERROUILLER la gâchette du pistolet.

Español

1	Ajuste el dispositivo de control de presión al valor más bajo.	2	**Encienda** la fuente de alimentación.	3	Aumente la presión 1/4 de vuelta para poner en marcha el motor. Deje que el fluido circule por el tubo de drenaje durante 15 segundos.	4	Coloque la válvula de cebado en posición horizontal. Suelte el seguro del gatillo de la pistola de pulverización.



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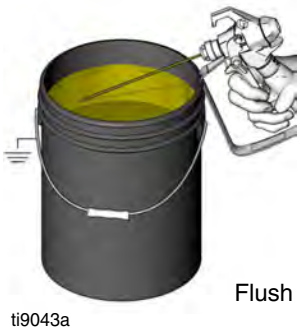


ti9043a

English

5	Hold gun against grounded metal flushing pail. Trigger gun and flush 1 minute.	6	Inspect for leaks. Do not stop leaks with hand or a rag! If leaks occur, perform **Pressure Relief**, page 9. Tighten fittings.	7	Place siphon tube in paint pail.	8	Trigger gun again into flushing pail until paint appears.

Français

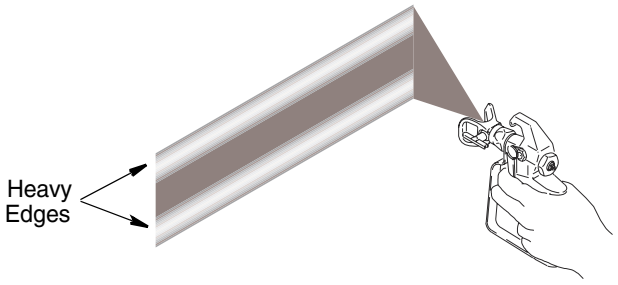
5	Appuyer le pistolet contre un seau de rinçage métallique mis à la terre. Actionner le pistolet et rincer pendant 1 minute.	6	Contrôler l'étanchéité. Ne pas arrêter une fuite avec la main ou un chiffon! En cas de fuite, effectuer une **Décompression**, page 9. Resserrer les raccords.	7	Mettre le tuyau de succion dans un seau de peinture.	8	Actionner le pistolet en le tenant dans un seau de rinçage jusqu'à ce que la peinture s'écoule.

Español

5	Mantenga la pistola contra un recipiente metálico de lavado conectado a tierra. Dispare la pistola y lave durante 1 minuto.	6	Inspeccione los racores en busca de fugas. ¡No detenga las fugas con la mano o con un trapo! Si hubiera fugas, lleve a cabo el **Procedimiento de descompresión**, página 9. Apriete los racores.	7	Coloque el tubo de aspiración en la lata de pintura.	8	Vuelva a dispara la pistola en el recipiente de lavado hasta que salga pintura.

ti9044a	ti9045a		
English			
9 Move gun to paint pail and trigger for 20 seconds. Set gun safety ON.	10 Screw tip assembly onto gun. Tighten. For gun assembly instructions, see gun manual, 311979.		
Français			
9 Déplacer le pistolet vers le seau de peinture et presser la gâchette pendant 20 secondes. VERROUILLER le pistolet.	10 Visser la buse sur le pistolet. Serrer. Pour les instructions de montage du pistolet, voir le manuel du pistolet, 311995.		
Español			
9 Mueva la pistola al bidón de pintura y dispárela durante 20 segundos. Enganche el seguro del gatillo.	10 Enrosque el conjunto de la boquilla en la pistola y apriétela. Para obtener las instrucciones de montaje de la pistola, vea el manual de la pistola 311980.		

Spray Test Pattern / Faire un essai de pulvérisation / Pulverice la plantilla de prueba



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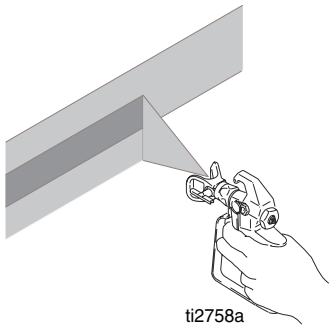


ti2758a

English

1	Spray test pattern. Adjust pressure to eliminate heavy edges.	2	Use smaller tip size if pressure adjustment cannot eliminate heavy edges.	3	Hold gun perpendicular, 10-12 in. from surface. Spray back and forth; overlap by 50%.	4	Move gun before triggering. Release before stopping. For additional spraying information, see gun manual 311979.

Français

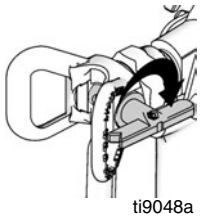
1	Faire un essai de pulvérisation. Ajuster la pression pour supprimer les bords trop chargés.	2	Prendre une buse de plus petit diamètre si le réglage de pression ne parvient pas à supprimer les bords trop chargés.	3	Tenir le pistolet perpendiculairement à la surface à peindre, à 10-12 in. Faire des mouvements de va-et-vient. Chevaucher de 50 %.	4	Déplacez le pistolet avant le déclenchement. Relâcher la gâchette avant d'arrêter. Pour plus d'informations sur l'application, voir le manuel du pistolet 311995.

Español

1	Pulverice la plantilla de prueba. Ajuste la presión para suprimir los extremos densos.	2	Si no logra hacerlo, utilice una boquilla más pequeña.	3	Mantenga la pistola en posición perpendicular, a 10-12 pulg. de la superficie. Pulverice hacia adelante y hacia atrás. Superponga las pasadas en un 50%.	4	Mueva la pistola antes de accionar. Para obtener información adicional, vea el manual de la pistola 311980.

Clearing Clogs / Débouchage / Eliminación de las obstrucciones

ti9046a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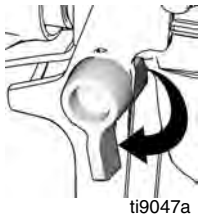
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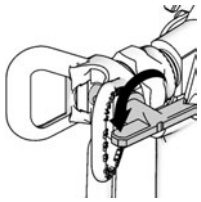
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English

1	Release trigger, put safety ON. Rotate Spray Tip. Take safety OFF. Trigger gun to clear clog.	2	Put safety ON. Return Spray Tip to original position. Take safety OFF and continue spraying.

Français

1	Relâcher la gâchette, la VERROUILLER. Faire pivoter la buse. DEVERROUILLER la gâchette. Actionner le pistolet pour déboucher la buse.	2	VERROUILLER la gâchette. Remettre la buse en position initiale. DEVERROUILLER la gâchette et poursuivre la pulvérisation.

Español

1	Suelte el gatillo, y enganche el seguro. Gire la boquilla de pulverización. Suelte el seguro. Dispare la pistola para despejar la obstrucción.	2	Enganche el seguro del gatillo. Vuelva a colocar la boquilla de pulverización en su posición original. Suelte el seguro del gatillo y siga pulverizando.

Cleanup / Nettoyage / Limpieza

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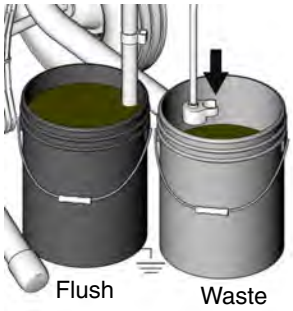

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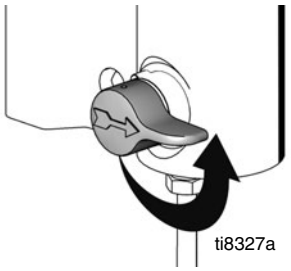
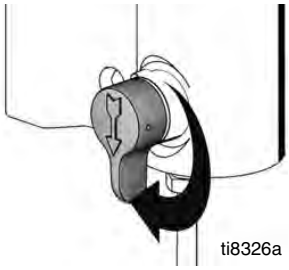
Pail Flush	**English**		
1 **Relieve Pressure**, page 9.	2 Remove guard and Spray Tip. For additional information, see gun manual 311979.	3 Remove siphon tube set from paint. Wipe excess paint off outside of tubes.	4 Place siphon tube in flushing fluid. Use water for water base paint and mineral spirits for oil base paint. Place drain tube in waste pail.
Vidange dans un seau	**Français**		
1 **Décompression**, page 9.	2 Démonter le garde-buse et la buse. Pour plus d'informations, voir le manuel du pistolet 311995.	3 Sortir le tuyau d'aspiration de la peinture. Essuyer l'extérieur du tube pour enlever l'excès de peinture.	4 Plonger le tuyau d'aspiration dans le produit de rinçage. Utiliser de l'eau pour une peinture à base aqueuse et du white-spirit pour une peinture à l'huile. Mettre le tuyau de vidange dans un seau à déchets.
Lavado del bidón	**Español**		
1 **Libere la presión**, página 9.	2 Retire el portaboquillas y la boquilla de pulverización. Para obtener información adicional, consulte el manual de la pistola 311980.	3 Retire el conjunto del tubo de aspiración de la pintura. Limpie el exceso de pintura del exterior de los tubos.	4 Coloque el tubo de aspiración en el cubo de lavado. Utilice agua para las pinturas al agua y alcohol mineral para pinturas al aceite. Coloque el tubo de drenaje en el cubo de lavado.

			
English			
5 Turn prime valve horizontal.	6 Hold gun against paint pail. Take trigger safety OFF. Turn sprayer ON. Trigger gun and increase pressure until the pump runs steady and flushing fluid appears	7 Stop triggering gun. Move gun to waste pail, hold gun against pail, trigger gun to thoroughly flush system.	8 While continuing to trigger gun, turn prime valve down. Then, release gun trigger. Allow flushing fluid to circulate until fluid coming out of drain tube is clear.
Français			
5 Mettre la vanne d'amorçage en position horizontale.	6 Appuyer le pistolet contre le seau de peinture. Mettre en MARCHE. DEVERROUILLER la gâchette. Actionner le pistolet et augmenter la pression jusqu'à ce que la pompe tourne à un régime constant et que le fluide de rinçage s'écoule.	7 Relâcher la gâchette. Approcher le pistolet du seau à déchets, l'appuyer contre le seau et actionner le pistolet pour rincer soigneusement le pulvérisateur.	8 Tout en continuant à actionner le pistolet, tourner la vanne d'amorçage vers le bas. Ensuite, relâcher la gâchette. Faire circuler le fluide de rinçage jusqu'à ce que le fluide qui s'écoule du tube de vidange soit propre.
Español			
5 Coloque la válvula de cebado en posición horizontal.	6 Mantenga la pistola contra la lata de pintura. Encienda la fuente de aliimentación. Suelte el seguro del gatillo. Dispare la pistola y aumente la presión hasta que la bomba funcione de forma constante y aparezca líquido de lavado.	7 Deje de disparar la pistola. Mueva la pistola hasta el bidón de lavado, mantenga la pistola contra el bidón y dispárela para lavar el sistema.	8 Mientras sigue disparando la pistola, gire la válvula de cebado hacia abajo. Después, suelte el gatillo. Deje que el fluido de lavado circule hasta que el tubo de drenaje salga fluido limpio.

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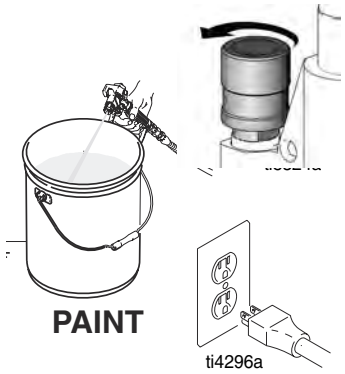

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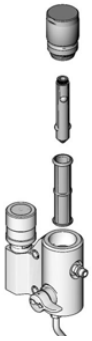


ti9053a

English

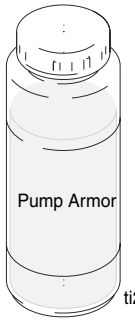
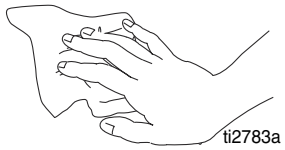
9 Raise siphon tube above flushing fluid.	10 Close drain valve. Trigger gun into flushing pail to purge fluid from hose.	11 Turn pressure control knob all the way down and power switch OFF. Unplug sprayer.	12 Remove filter. Clean and inspect. Install filter.

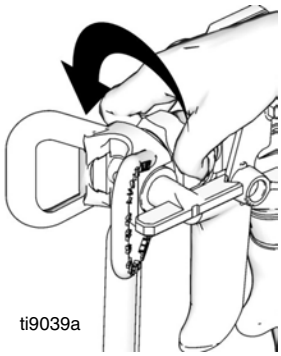
Français

9 Relever le tuyau d'aspiration au-dessus du niveau de produit de rinçage.	10 Fermer la vanne de vidange. Actionner le pistolet au-dessus du seau de rinçage pour chasser le fluide du flexible.	11 Mettre le bouton de régulation de pression sur minimum et mettre le bouton de commande sur ARRÊT. Débrancher le pulvérisateur.	12 Si le pulvérisateur est équipé d'un filtre, le démonter, le nettoyer et l'examiner. Ensuite, le remonter.

Español

9 Suba el tubo de aspiración por encima del líquido de lavado.	10 Cierre la válvula de drenaje. Dispare la pistola en el recipiente de lavado para purgar el fluido de la manguera.	11 Gire completamente hacia abajo el mando de control de presión y apague el interruptor de potencia. Desenchufe el pulverizador.	12 Si tiene un filtro instalado en el pulverizador, retírelo. Limpie e inspeccione. Instale el filtro.

	 ti2895a	 ti2783a	
English			
13 Remove filter from gun if installed. Clean and inspect. Install filter. See gun manual 311979.	14 If flushing with water, flush again with mineral spirits or Pump Armor to leave a protective coating to prevent freezing or corrosion.	15 Wipe sprayer, hose and gun with a rag soaked in water or mineral spirits.	
Français			
13 Démonter le filtre du pistolet, si existant. Le nettoyer et l'examiner. Voir le manuel du psitolet 311995.	14 En cas de rinçage à l'eau, rincer à nouveau avec du white-spirit ou un produit anti-corrosion pour que ce produit constitue un revêtement protecteur qui empêchera le gel ou la corrosion.	15 Essuyer le pulvérisateur, le flexible et le pistolet avec un chiffon imbibé d'eau ou de white-spirit.	
Español			
13 Si estuvieran instalados, retire los filtros de la pistola. Limpie e inspeccione. Instale el filtro. Consulte el manual de la pistola 311980.	14 Si se utiliza agua para el lavado, vuelva a lavar con alcohol mineral, o Protección para bombas y deje este recubrimiento protector en el pulverizador para ayudar a evitar la congelación o la corrosión.	15 Frote el pulverizador, la manguera y la pistola con un paño empapado en agua o alcohol mineral.	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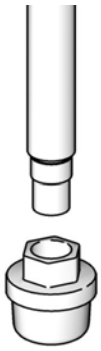
Power Flush™	**English**		
Power flushing is a faster method of flushing. It can only be used after spraying water-based coatings.	1 **Relieve Pressure**, page 9.	2 Remove guard and spray tip. For additional information, see gun manual 311979.	3 Remove siphon tube set from paint. Wipe excess paint off outside of tubes.
Rinçage forcé	**Français**		
Le rinçage forcé est une méthode de rinçage rapide. Il n'est possible qu'apres une applica-tion de produit abase aqueuse.	1 **Décompression**, page 9.	2 Démonter le garde-buse et la buse. Pour plus d'informations, voir le manuel du pistolet 311995.	3 Sortir le tuyau d'aspiration de la peinture. Essuyer l'extérieur du tube pour enlever l'excès de peinture.
Lavado mecánico	**Español**		
El lavado mecánico es el método de lavado más rápido. Sólo puede utilizarse después de pulverizar revestimientos acuosos.	1 **Libere la presión**, página 9.	2 Retire el portaboquillas y la boquilla de pulverización. Para obtener información adicional, consulte el manual de la pistola 311980.	3 Coloque el tubo de aspiración en el cubo de lavado. Utilice agua para las pinturas al agua y alcohol mineral para pinturas al aceite. Coloque el tubo de drenaje en el cubo de lavado.



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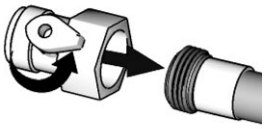

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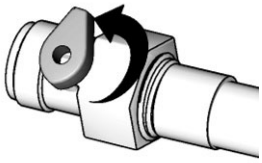

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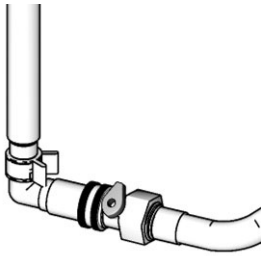

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English

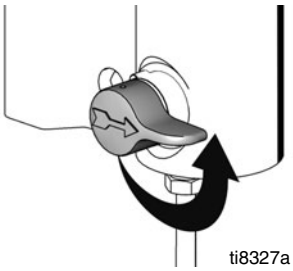
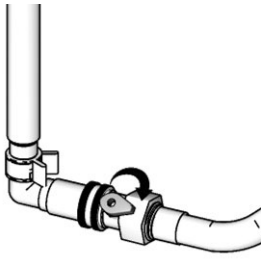
4 Unscrew inlet strainer from suction tube. Place inlet screen in waste pail.	5 Screw shutoff valve onto garden hose. Turn lever and open valve.	6 Turn on water. Rinse paint off suction tube, prime tube and inlet screen. Close valve	7 Connect power flush adapter to suction tube. Connect shutoff valve and garden hose to power flush adapter. Leave prime tube in waste pail.

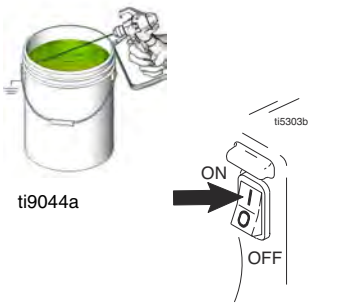
Français

4 Dévisser le filtre d’entrée vissé sur le tuyau d’aspiration. Le mettre dans le seau à déchets.	5 Vissez le robinet d'isolement sur le flexible de jardin. Tournez le levier et ouvrez la valve.	6 Ouvrir l’eau. Rincer le tuyau d’aspiration, le tuyau d’amorçage et le filtre d’entrée pour éliminer la peinture	7 Reliez l'adapteur affleurant de puissance au tube d'aspiration. Reliez le robinet d'isolement et le flexible de jardin a l'adapteur d'éclat de puissance. Laissez le tube principal dans le seau de rebut.

Español

4 Desenrosque la rejilla de entrada del tubo de aspiración. Coloque la pantalla de entrada en un cubo de desecho.	5 Atornille la válvula de cierre sobre la manguera del jardín. Dé vuelta a la palanca y abra la válvula.	6 Abra el agua. Enjuague la pintura del tubo de aspiración, el tubo de cebado y la rejilla de entrada.	7 Conecte el adaptador rasante de la energía con el tubo de la succión. Conecte la válvula de cierre y la manguera del jardín con el adaptador del rubor de la energía. Deje el tubo primero en el cubo inútil.

 ti8327a	 ti9415a	ti8325a	
English			
8 Turn Spray-Prime/Drain valve to SPRAY.	9 Open lever on shutoff valve.	10 Turn Pressure Control knob 1/4 turn clockwise.	Step 11 is for returning paint in hose back to paint pail. One 50-ft (15-m) hose holds approximately 1-quart (1-liter) of paint.
Français			
8 Mettre la vanne de pulvérisation-amorçage/vidange en position PULVÉRISATION	9 Ouvrez le levier de robinet d'isolement	10 Tournez le bouton de régulation de pression 1/4 tourne dans le sens des aiguilles d'une montre.	Étape 11 est pour la peinture de renvoi dans le tuyau de nouveau au seau de peinture. Un tuyau de 50 pi (15-m) tient approximativement 1 quart (1-liter) de peinture.
Español			
8 Coloque la válvula de pulverización/cebado en la posición PULVERIZAR.	9 Abra la palanca de la válvula de cierre	10 Dé vuelta a la perilla de control de presión 1/4 da vuelta dextrórsum.	El paso 11 está para la pintura que vuelve en manguera de nuevo al cubo de la pintura. Una manguera de 50 pies (el 15-m) sostiene aproximadamente 1 cuarto de galón (1-liter) de pintura.



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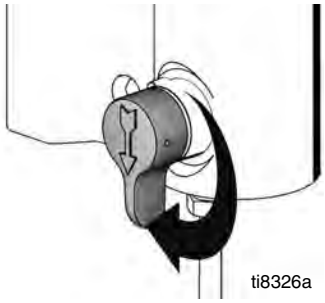
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English

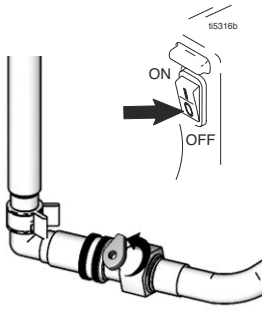
11 Remove paint from hose. a. Pull and hold gun trigger. Point gun into paint pail. b. Turn power switch ON to begin pumping paint in hose back into paint pail. c. When water comes out of gun, continue to trigger gun, aiming gun into waste pail.	12 Continue triggering gun into waste pail for 1-2 minutes, until relatively clear water comes out of gun.	13 Turn Spray-Prime/Drain valve to PRIME.	14 Circulate water through sprayer, into waste pail, for 20 seconds.

Français

11 Enlevez la peinture du flexible. a. Presser et maintenir la gâchette enfoncée. Diriger le pistolet vers l'intérieur du seau de peinture. b. Mettre le bouton marche-arrêt sur MARCHE pour commencer à refouler la peinture dans le flexible puis dans le seau de peinture. c. Quand l'eau sort du pistolet, continuer à presser la gâchette en visant l'intérieur du seau à déchets.	12 Maintenir le pistolet actionné pendant 1 à 2 minutes dans le seau à déchets jusqu'à ce que l'eau s'écoulant du pistolet soit relativement claire.	13 Mettre la vanne de pulvérisation - d'amorçage/vidange sur AMORÇAGE.	14 Faire circuler l'eau à travers le pulvérisateur et la laisser s'écouler dans le seau à déchets pendant 20 secondes.

Español

11 Quite la pintura de la manguera a. Dispare y mantenga disparado el gatillo de la pistola. Dirija ésta hacia la lata de pintura. b. Coloque el interruptor de potencia en posición ON para comenzar a bombear pintura desde la manguera de vuelta al bidón de pintura. c. Cuando salga agua por la pistola, siga disparando ésta, dirigiéndola hacia el bidón de lavado.	12 Siga disparando la pistola hacia el cubo de desecho durante 1–2 minutos, hasta que por la pistola salga agua relativamente limpia.	13 Gire la válvula de pulverización/cebado hasta la posición CEBAR.	14 Haga circular agua por el pulverizador, en el bidón de desecho, durante 20 segundos.



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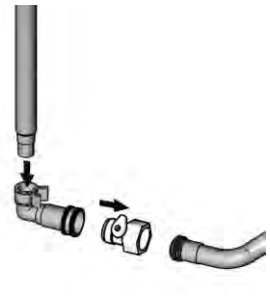

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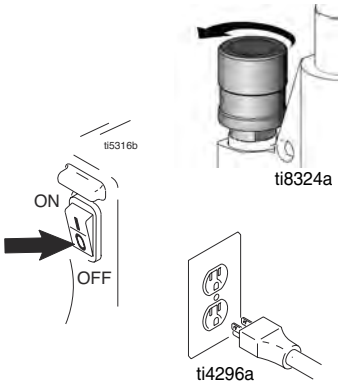

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English

15 Turn power switch OFF.
16 Close shutoff valve. Turn off water from garden hose.

17 Unscrew shutoff valve from garden hose. Remove power flush adapter from suction tube. Install inlet strainer.

18 Close drain valve. Turn power ON. Trigger gun into flushing pail to purge fluid from hose.

19 Turn pressure control knob all the way down and power switch OFF. Unplug sprayer.

Français

15 Positionner le bouton M-A sur ARRÊT.
16 Robinet d'isolement étroit. Arretez l'eau du flexible de jardin.

17 Dévissez le robinet d'isolement du flexible de jardin. Enlevez l'adapteur affleurant de puissance du tube d'aspiration. Installez le filtre d'entrée

18 Fermer la vanne de vidange. Mettre en MARCHE. Actionner le pistolet au-dessus du seau de rinçage pour chasser le fluide du flexible.

19 Mettre le bouton de régulation de pression sur minimum et mettre le bouton de commande sur ARRÊT. Débrancher le pulvérisateur.

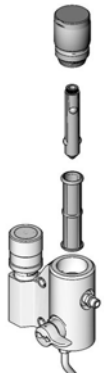
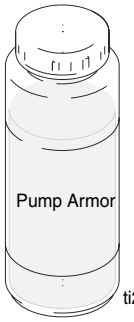
Español

15 Coloque el interruptor de potencia en OFF.
16 Válvula de cierre cercana. Dé vuelta apagado al agua de la manguera del jardín.

17 Desatornille la válvula de cierre de la manguera del jardín. Quite el adaptador rasante de la energía del tubo de la succión. Instale la rejilla de entrada.

18 Cierre la válvula de drenaje. Encienda la fuente de alimentación. Dispare la pistola en el recipiente de lavado para purgar el fluido de la manguera.

19 Gire completamente hacia abajo el mando de control de presión y apague el interruptor de potencia. Desenchufe el pulverizador.

 ti9053a		 ti2895a	ti2783a
English			
20 Remove filter. Clean and inspect. Install filter.	21 Remove filter from gun if installed. Clean and inspect. Install filter. See gun manual 311979.	22 If flushing with water, flush again with mineral spirits or Pump Armor to leave a protective coating to prevent freezing or corrosion.	23 Wipe sprayer, hose and gun with a rag soaked in water or mineral spirits.
Français			
20 Enlevez le filtre. Nettoyez et inspectez. Installez le filtre.	21 Démonter le filtre du pistolet, si existant. Le nettoyer et l'examiner. Voir le manuel du psitolet 311995.	22 En cas de rinçage à l'eau, rincer à nouveau avec du white-spirit ou un produit anti-corrosion pour que ce produit constitue un revêtement protecteur qui empêchera le gel ou la corrosion.	23 Essuyer le pulvérisateur, le flexible et le pistolet avec un chiffon imbibé d'eau ou de white-spirit.
Español			
20 Quite el filtro. Limpie y examine. Instale el filtro.	21 Si estuvieran instalados, retire los filtros de la pistola. Limpie e inspeccione. Instale el filtro. Consulte el manual de la pistola 311980.	22 Si se utiliza agua para el lavado, vuelva a lavar con alcohol mineral, o Protección para bombas y deje este recubrimiento protector en el pulverizador para ayudar a evitar la congelación o la corrosión.	23 Frote el pulverizador, la manguera y la pistola con un paño empapado en agua o alcohol mineral.

Technical Data

Power requirements	120 Vac, 60 Hz, 11A, 1 phase
Generator required	3000 W minimum
Maximum working pressure	3000 psi (20.7 MPa, 207 bar)
Cycles per gallon (liter)	680 (180)
Maximum delivery gpm (lpm)	
210ES	0.43 (1.6)
190ES	0.38 (1.44)
Maximum tip size	
210ES	0.021
190ES	0.019
Fluid outlet npsm	1/4 in.
Dimensions	
Length	22.0 in. (55.9 cm)
Width	20.5 in. (52.1 cm)
Height	38.8 in. (98.6 cm)
Weight	59 lb (26.8 kg); 57 lb (25.9 kg) 210ES Series B
Wetted parts	zinc and nickel-plated carbon steel, nylon, stainless steel, PTFE, acetal, leather, UHMWPE, aluminum, tungsten carbide
Noise level*	
Sound power (IS0 3744)	100 dBa*
Sound pressure (ISO 3744)	90 dBa*

**Measured 3 feet (1 meter) from equipment.*

Caractéristiques techniques

Spécification électrique	120 V CA, 60 Hz, 11A, 1 phase
Générateur nécessaire	3000 W minimum
Pression maximum de service	3000 psi (20,7 MPa, 207 bars)
Cycles par gallon (litre)	680 (180)
Débit maximum gpm (lpm)	
210ES	0,43 (1,6)
190ES	0,38 (1,44)
Taille de buse maxi	
210ES	0,021
190ES	0,019
Sortie produit npsm	1/4 in.
Dimensions	
Longueur	22,0 in. (55,9 cm)
Largeur	20,5 in. (52,1 cm)
Hauteur	38,8 in. (98,6 cm)
Poids	59 lb (26,8 kg); 57 lb (25,9 kg) 210 ES Serie B
Pièces en contact avec le produit	Acier au carbone galvanisé et nickelé, nylon, acier inox, PTFE, acetal, cuir, UHMWPE, aluminium, carbure de tungstène
Niveau de bruit*	
Puissance sonore (IS0 3744)	100 dBa*
Pression sonore (ISO 3744)	90 dBa*

**Mesuré à 3 pieds (1 mètre) de l'appareil.*

Características técnicas

Requisitos eléctricos	120V CA, 60 Hz, 11A, monofásico
Generador necesario	3000 W como mínimo
Presión máxima de funcionamiento	3000 psi (20,7 MPa, 207 bar)
Ciclos por galón (litro)	680 (180)
Caudal máximo gpm (lpm)	
210ES	0,43 (1,6)
190ES	0,38 (1,44)
Tamaño máximo de la boquilla	
210ES	0,021
190ES	0,019
Salida de fluido npsm	1/4 in.
Dimensiones	
Longitud	55,9 cm (22.0 pulg.)
Anchura	52,1 cm (20.5 pulg.)
Altura	98,6 cm (38.8 pulg.)
Peso	26,8 kg (59 lb); 57 lb (25.9 kg) Serie B
Piezas húmedas	Acero al carbono revestido de zinc y níquel, acero inoxidable, PTFE, acetal, cuero, UHMWPE, aluminio, carburo de tungsteno
Nivel de sonido*	
Potencia de sonido (IS0 3744)	100dBa*
Presión de sonido (ISO 3744)	90 dBa*

**Medido a una distancia de 1 metro (3 pies) del equipo.*

Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

POUR LES CLIENTS DE GRACO PARLANT FRANCAIS

Les parties reconnaissent avoir convenu que la rédaction du présent document ainsi que de tous les documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées, sera en anglais.

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Die Parteien bestätigen hiermit die festgelegte Vereinbarung, daß das vorliegende Dokument sowie alle anderen Dokumente, Mitteilungen und Gerichtsverfahren, die im Zusammenhang damit erstellt, verteilt oder eingeleitet werden, oder sich direkt oder indirekt darauf beziehen, in englischer Sprache verfaßt sein sollen.

PARA LOS CLIENTES DE GRACO QUE HABLAN ESPAÑOL

Las partes reconocen haber convenido que el presente documento, así como todos los documentos, notificaciones y procedimientos judiciales emprendidos, presentados o establecidos que tengan que ver con estas garantías directa o indirectamente, estarán redactados en inglés.

PER I CLIENTI GRACO ITALIANI

Le controparti riconoscono di aver richiesto che il presente documento, e tutti gli altri documenti, avvisi e informazioni di natura legale sottoscritti, conferiti o istituiti direttamente o indirettamente, siano redatti in lingua inglese.

VOOR GRACO-KLANTEN IN NEDERLAND

De partijen zijn zich ervan bewust dat zij hebben geëist dat het onderhavige document, evenals alle documenten, berichtgevingen en wettelijke procedures die worden aangegaan, overhandigd of in gang gezet hetzij als gevolg van hetzij rechtstreeks hetzij indirect in relatie tot het onderhavige worden opgesteld in de Engelse taal.

ADDITIONAL WARRANTY COVERAGE

Graco does provide extended warranty and wear warranty for products described in the "Graco Contractor Equipment Warranty Program".

TO PLACE AN ORDER, contact your Graco distributor, or call **1-800-690-2894** to identify the nearest distributor.

CJ Spray™

TO PLACE AN ORDER, contact your Graco distributor, or call **1-800-690-2894** to identify the nearest distributor.

All written and visual data contained in this document reflects the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 311988
Traduction des instructions originales.This manual contains French. MM 311988
Traducción de las instrucciones originales. This manual contains Spanish. MM 311988
Graco Headquarters: Minneapolis,
International Offices: Belgium, Korea, China, Japan

C.J. Spray, Inc.
6270 Claude Way E
Inver Grove Heights, MN 55076
1-888-CJSPRAY
(888-257-7729)

Repair

190ES/210ES™ Electric Airless Sprayer

311990H
EN

- For portable spray application of architectural paints and coatings -

190ES Model: 261825
210ES Model: 261830
Maximum Working Pressure: 3000 psi (20.7 MPa, 207 bar)

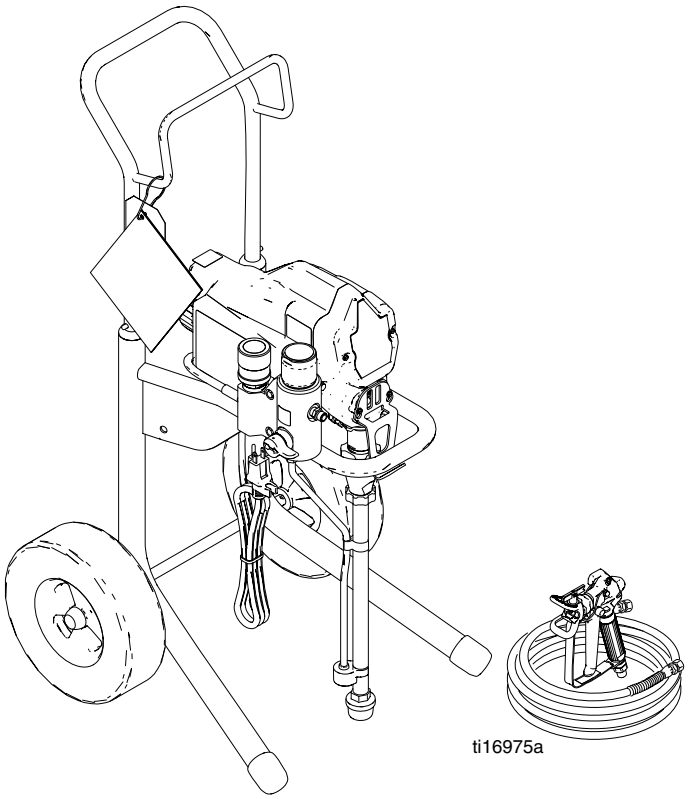
Important Safety Instructions
Read all warnings and instructions in this manual. Save these instructions.

Related Manuals

311988

312830 English **312831 Français** **312832 Español**

312015



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C.J. Spray, Inc.
6270 Claude Way E
Inver Grove Heights, MN 55076
1-888-CJSPRAY
(888-257-7729)

PROVEN QUALITY. LEADING TECHNOLOGY.

Warning

The following warnings are for the setup, use, grounding, maintenance and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risks. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Sprayer generates sparks. When flammable liquid is used in or near the sprayer or for flushing or cleaning, keep sprayer at least 20 feet (6 m) away from explosive vapors.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
- Ground equipment and conductive objects in work area. Read **Grounding** instructions.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

ELECTRIC SHOCK HAZARD

Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power cord before servicing equipment.
- Use only grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on sprayer and extension cords.
- Do not expose to rain. Store indoors.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Engage trigger lock when not spraying.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. Read **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. Read **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine Graco replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your Graco distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or overbend hoses or use hoses to pull equipment.
- Comply with all applicable safety regulations.
- Keep children and animals away from work area.
- Do not operate the equipment when fatigued or under the influence of drugs or alcohol.

PRESSURIZED ALUMINUM PARTS HAZARD

Do not use 1, 1, 1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.

BURN HAZARD

Equipment surfaces can become very hot during operation. To avoid severe burns, do not touch hot equipment. Wait until equipment has cooled completely.

MOVING PARTS HAZARD

Moving parts can pinch or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** in this manual. Disconnect power or air supply.

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

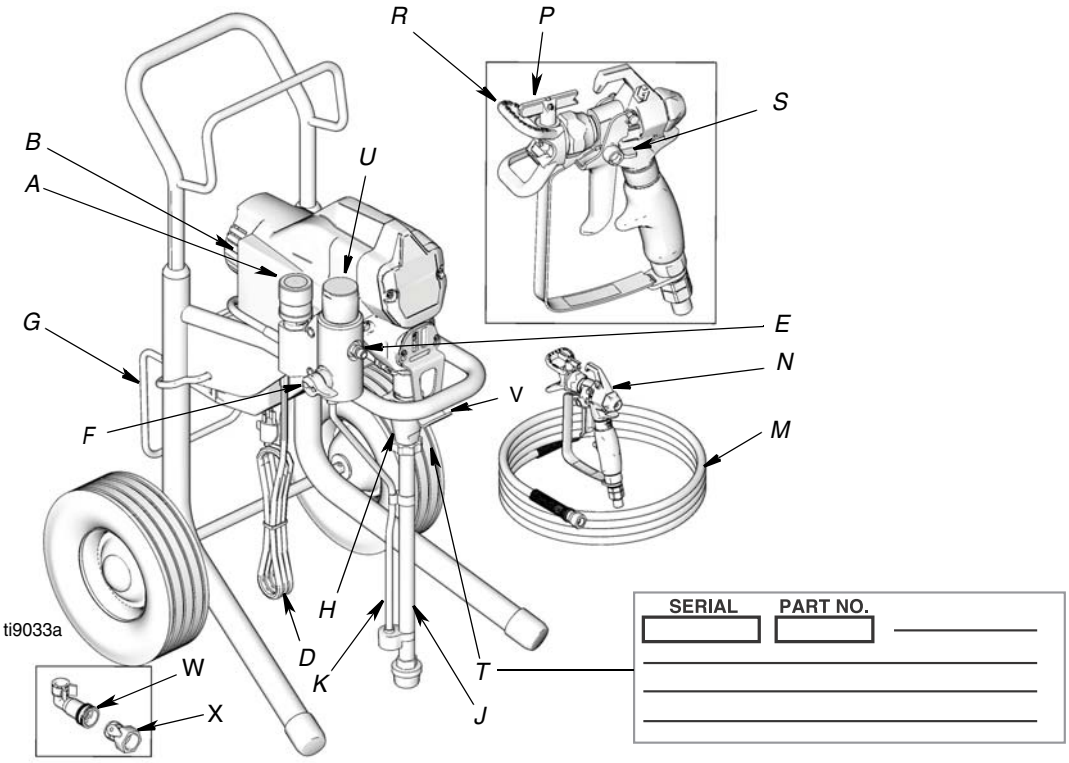
- Read MSDS's to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eye wear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

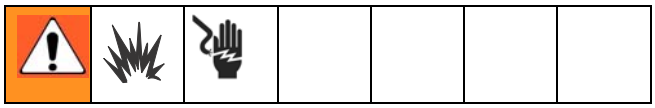
Component Identification



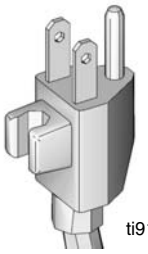
Ref	Component
A	Pressure Control
B	ON/OFF Switch
D	Power Cord
E	Fluid Outlet
F	Prime Valve
G	Kick Stand (210ES Series A)
H	Pump
J	Suction Tube
K	Drain Hose
M	Fluid Hose
N	Gun
P	Tip
R	Guard
S	Trigger Safety Lock
T	Serial Number ID Label
U	Filter Cap
V	Pail Hook
W	Power Flush Adapter
X	Shutoff Valve

Installation

Grounding and Electric Requirements

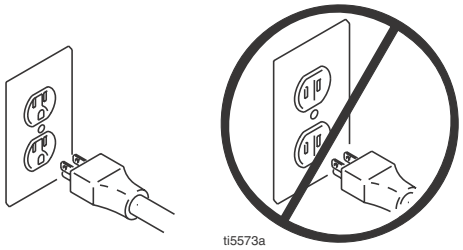


The sprayer cord includes a grounding wire with an appropriate grounding contact.

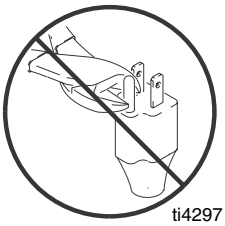


The sprayer requires:
100-130 Vac, 60 Hz, 11A, 1 phase, circuit with a grounding receptacle.

Never use an outlet that is not grounded or an adapter.



Do not use the sprayer if the electrical cord has a damaged ground contact. Only use an extension cord with an undamaged ground contact.



Recommended extension cords:
110-120V: 3-wire, 12 AWG (2.5 mm^2) minimum, 300 ft (90 m) maximum length.

Smaller gauge or longer extension cords may reduce sprayer performance.

Spray gun: ground through connection to a properly grounded fluid hose and pump.

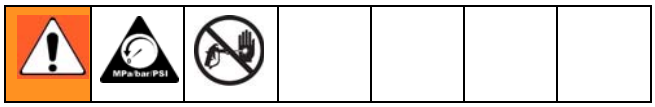
Fluid supply container: follow local code.

Solvent and Oil-based fluids: follow local code. Use only conductive metal pails placed on a grounded surface such as concrete. Do not place the pail on a non-conductive surface such as paper or cardboard, which interrupts grounding continuity.

Grounding the metal pail: connect a ground wire to the pail by clamping one end to pail and other end to ground such as a water pipe.

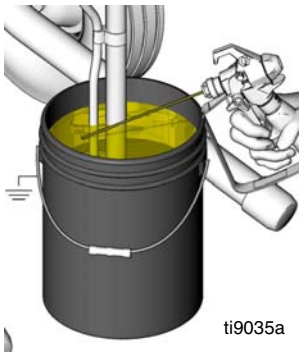
To maintain grounding continuity when flushing or relieving pressure: hold metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the gun.

Pressure Relief Procedure

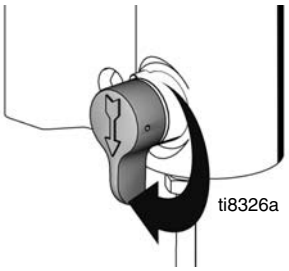


Follow this **Pressure Relief Procedure** whenever you are instructed to relieve pressure, stop spraying, check or service equipment or install or clean spray tip.

1. Turn OFF power and turn pressure control to lowest pressure setting.
2. Hold gun against side of grounded metal flushing pail. Trigger gun to relieve pressure.



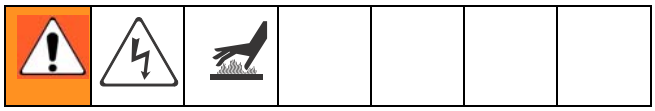
3. Turn prime valve down.

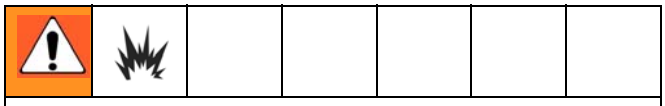


If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.

4. Engage trigger safety lock on gun if unit is being shut down or left unattended.

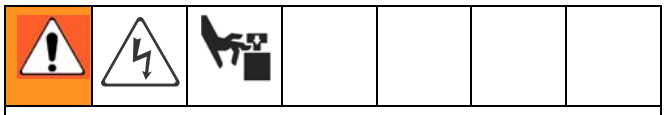
General Repair Information





Flammable materials spilled on hot, bare, motor could cause fire or explosion. To reduce risk of burns, fire or explosion, do not operate sprayer with cover removed.

- Keep all screws, nuts, washers, gaskets, and electrical fittings removed during repair procedures. These parts usually are not provided with replacement kits.
- Test repairs after problems are corrected.
- If sprayer does not operate properly, review repair procedure to verify you did it correctly. See **Troubleshooting**, page 8.
- Overspray may build up in the air passages. Remove any overspray and residue from air passages and openings in the enclosures whenever you service sprayer.
- Do not operate the sprayer without the motor shroud in place. Replace if damaged. Motor shroud directs cooling air around motor to prevent overheating and insulates the control board from accidental electric shock.



To reduce risk of serious injury, including electric shock:

- Do not touch moving or electric parts with fingers or tools while testing repair.
- Unplug sprayer when power is not required for testing.
- Install all covers, gaskets, screws and washers before you operate sprayer.

CAUTION

- Do not run sprayer dry for more than 30 seconds. Doing so could damage pump packings.
- Protect the internal drive parts of this sprayer from water. Openings in the cover allow for air cooling of the mechanical parts and electronics inside. If water gets in these openings, the sprayer could malfunction or be permanently damaged.
- Prevent pump corrosion and damage from freezing. Never leave water or water-base paint in sprayer when its not in use in cold weather. Freezing fluids can seriously damage sprayer. Store sprayer with Pump Armor to protect sprayer during storage.

Troubleshooting

Problem	What To Check *(If check is OK, go to next check)*	What To Do *(When check is not OK, refer to this column)*
Motor Won't Operate		
Basic Fluid Pressure	1. Pressure control knob setting. Motor will not run if set at minimum (fully counter-clockwise).	Slowly increase pressure setting to see if motor starts.
	2. Spray tip or fluid filter may be clogged.	**Relieve pressure**, page 6. Then clear clog or clean gun filter. Refer to gun instruction manual, 311979.
Basic Mechanical	1. Pump frozen or hardened paint	Thaw sprayer if water or water-based paint has frozen in sprayer. Place sprayer in warm area to thaw. Do not start sprayer until thawed completely. If paint hardened (dried) in sprayer, replace pump packings. See page 12, **Displacement Pump Replacement**.
	2. Displacement pump connecting rod pin. Pin must be completely pushed into connecting rod and retaining spring must be firmly in groove or pump pin.	Push pin into place and secure with spring retainer. See page 12, **Displacement Pump Replacement**.
	3. Motor. Remove drive housing assembly. See page 14, **Drive Housing Replacement**. Try to rotate fan by hand.	Replace motor if fan won't turn. See page 26, **Motor Replacement**.

Problem	What To Check *(If check is OK, go to next check)*	What To Do *(When check is not OK, refer to this column)*
Basic Electrical *See wiring diagram, page 27*	1. Electric supply. ON/OFF switch in OFF position. Meter must read 100-130 Vac.	Turn ON/OFF switch to ON position. Reset building circuit breaker, replace building fuses. Try another outlet.
	2. Extension cord. Check extension cord continuity with volt meter.	Replace extension cord.
	3. Sprayer power supply cord. Inspect for damage such as broken insulation or wires.	Replace power supply cord. See page 25, **Power Cord Replacement**.
	4. Fuse. Check replaceable fuse on control board (next to ON/OFF switch).	Replace fuse after completing motor inspection. See page 20, **Fuse Replacement**.
	5. Motor leads are securely fastened and properly connected to control board.	Replace loose terminals; crimp to leads. Be sure terminals are firmly connected. Clean circuit board terminals. Securely reconnect leads.
	6. Motor thermal switch. Yellow motor leads must have continuity through thermal switch.	Replace motor. See page 26, **Motor Replacement**.
	7. Brush cap missing or loose brush lead connections.	Install brush cap or replace brushes if leads are damaged. See page 17, **Motor Brush Replacement**.
	8. Brush length which must be greater than 1/4 in. (6mm). NOTE: Brushes do not wear at the same rate on both sides of motor. Check both brushes.	Replace brushes. See page 17, **Motor Brush Replacement**.
	9. Motor armature commutator for burn spots, gouges and extreme roughness.	Remove motor and have motor shop resurface commutator if possible. See page 26, **Motor Replacement**.
	10. Motor armature for shorts using armature tester (growler) or perform spin test, page 15.	Replace motor. See page 26, **Motor Replacement**.
	11. Pressure control not plugged in to control board.	Insert pressure control connector into control board.

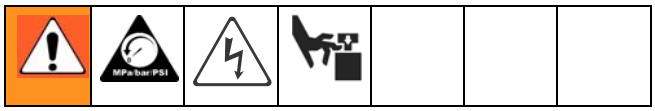
Problem	What To Check *(If check is OK, go to next check)*	What To Do *(When check is not OK, refer to this column)*
Low Output	1. Worn spray tip.	**Relieve pressure**, page 6. Replace tip. Refer to gun instruction manual, 311979.
	2. Verify pump does not continue to stroke when gun trigger is released.	Service pump. See page 12, **Displacement Pump Replacement**.
	3. Prime valve leaking.	**Relieve pressure**, page 6. Then repair prime valve. See page 23, **Manifold Replacement**.
	4. Suction tube connections.	Tighten any loose connections. Check o-ring on suction tube.
	5. Electric supply with volt meter. Meter must read 100-130 Vac. Low voltages reduce sprayer performance.	Reset building circuit breaker; replace building fuse. Repair electrical outlet or try another outlet.
	6. Extension cord size and length.	Replace with a correct, grounded extension cord. See page 5**, Grounding and Electric Requirements.**
	7. Leads from motor to circuit board for damaged or loose wire connectors. Inspect wiring insulation and terminals for signs of overheating.	Be sure male terminal pins are centered and firmly connected to female terminals. Replace any loose terminals or damaged wiring. Securely reconnect terminals.
	8. Worn motor brushes which must be greater than 1/4 in. (6 mm).	Replace brushes. See page 17. **Motor Brush Replacement**.
	9. Motor brushes binding in brush holders.	Clean brush holders. Remove carbon dust by using compressed air to blow out brush dust.
	10. Low stall pressure. Turn pressure control knob fully clockwise.	Replace pressure control assembly. See page 21, **Pressure Control Assembly Replacement**.
	11. Motor armature for shorts by using an armature tester (growler) or perform spin test, page 15.	Replace motor. See page 26, **Motor Replacement**.

Problem	What To Check *(If check is OK, go to next check)*	What To Do *(When check is not OK, refer to this column)*
Motor runs and pump strokes	1. Prime Valve Open.	Close prime valve.
	2. Paint supply.	Refill and reprime pump.
	3. Intake strainer clogged.	Remove and clean, then reinstall.
	4. Suction tube leaking air.	Tighten nut. Check o-ring on tube.
	5. Intake valve ball and piston ball are seating properly.	See Pump Manual 312015. Strain paint before using to remove particles that could clog pump.
	6. Leaking around throat packing nut which may indicate worn or damaged packings.	See Pump Manual 312015.
	7. Pump rod damaged.	See Pump Manual 312015.
Motor runs but pump does not stroke	1. Displacement pump pin damaged or missing.	Replace pump pin if missing. Be sure retaining spring is fully in groove all around connecting rod. See page 12, **Displacement Pump Replacement**.
	2. Connecting rod assembly for damage.	Replace connecting rod assembly. See page 12, **Displacement Pump Replacement**.
	3. Gears or drive housing.	Inspect drive housing assembly and gears for damage and replace if necessary. See page 14, **Drive Housing Replacement**.
Motor is hot and runs intermittently	1. Be sure ambient temperature where sprayer is located is not more than 115°F (46°C) and sprayer is not located in direct sun.	Move sprayer to shaded, cooler area if possible.
	2. Motor has burned windings indicated by removing positive (red) brush and seeing burned adjacent commutator bars.	Replace motor. See page 26, **Motor Replacement**.
	3. Tightness of pump packing nut. Overtightening tightens packings on rod, restricts pump action and damages packings.	Loosen packing nut. Check for leaking around throat. Replace pump packings if necessary. See pump manual 312015.

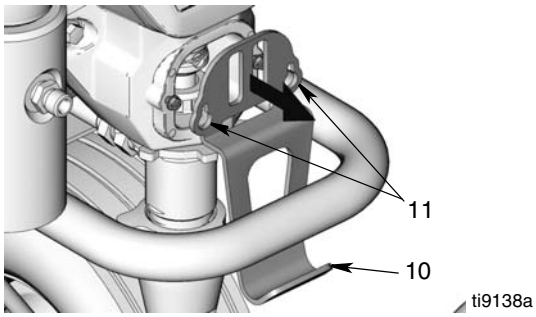
Displacement Pump Replacement

See manual 312015 for pump repair instructions.

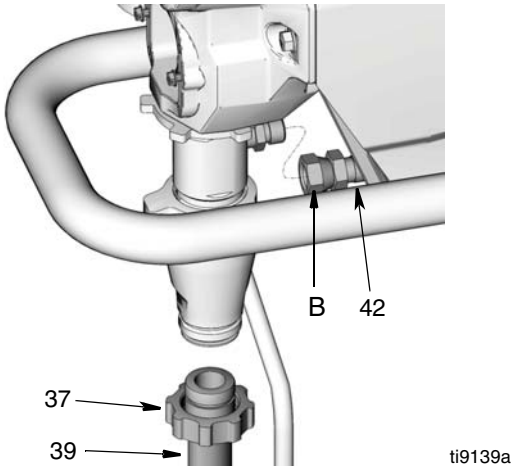
Removal



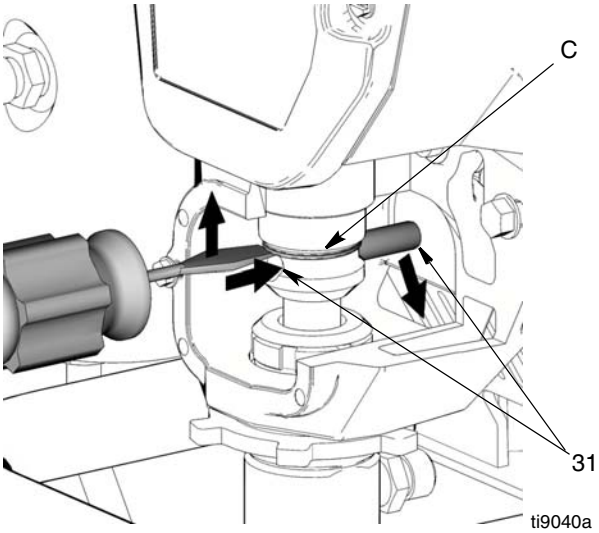
1. **Relieve pressure**, page 6. Unplug sprayer from outlet.
2. Loosen two screws (11) and remove pail hanger (10).



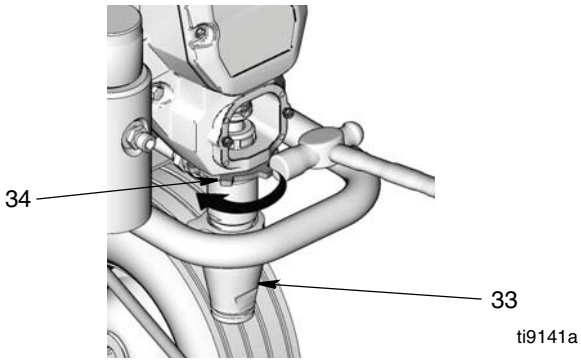
3. Loosen nut (37) and remove suction tube (39). Loosen nut (B) and remove coupled hose (42).



4. Cycle pump until pin (31) is in position to be removed.
5. Disconnect power cord from outlet.
6. Push up retaining spring (C). Push out pump pin (31).



7. Loosen pump jam nut (34). Unscrew and remove pump (33).



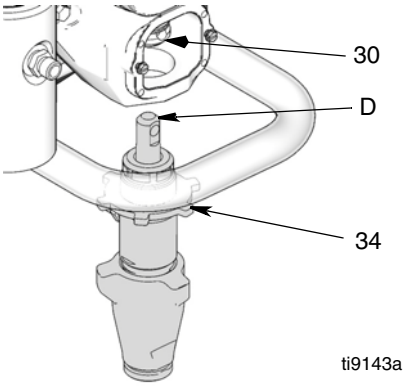
Installation

If pump pin works loose, parts could break off due to force of pumping action. Parts could project through air and result in serious injury or property damage.

CAUTION

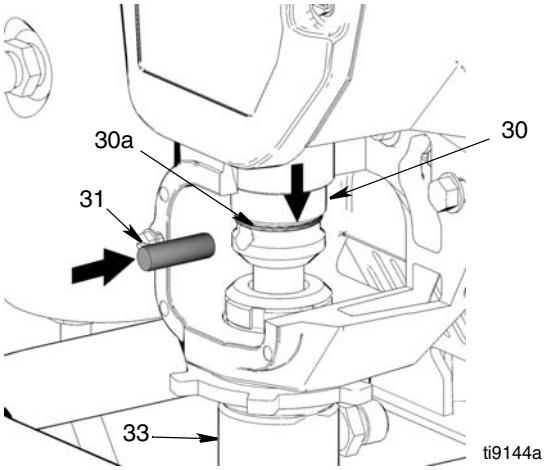
If the pump jam nut loosens during operation, the threads of the drive housing will be damaged.

1. Extend pump piston rod fully. Apply grease to top of pump rod (D). Install jam nut (34) on pump threads.



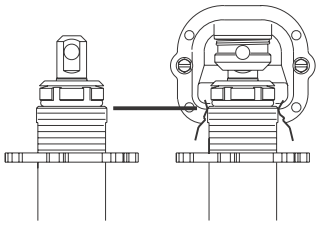
2. Install pump rod (D) into connecting rod (30).

3. Install pump pin (31). Verify retainer spring (30a) is in groove over pump pin.

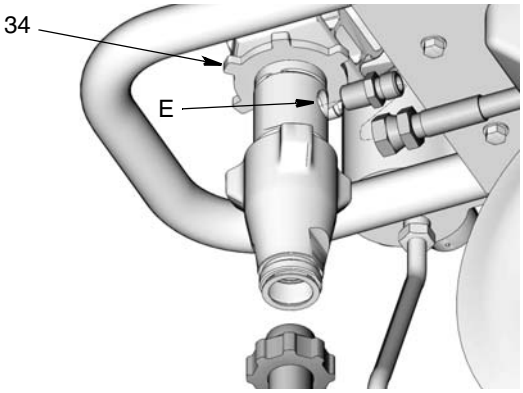


4. Push pump (33) up until pump threads engage.

5. Screw in pump until threads are flush with top of drive housing opening.

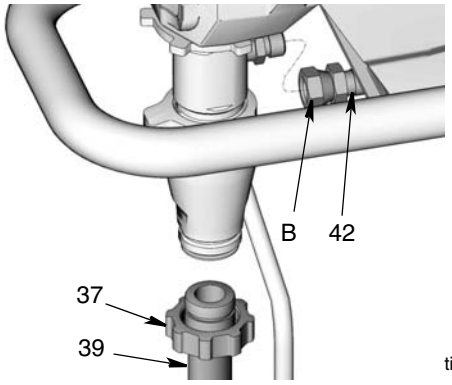


6. Align pump outlet (E) to back.

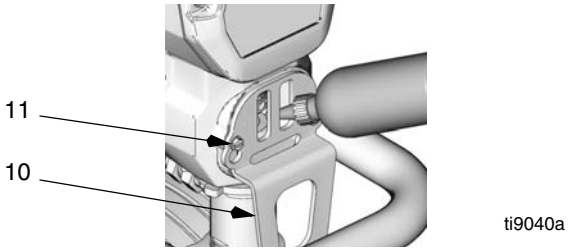


7. Screw jam nut (34) up onto pump until nut stops. Tighten jam nut by hand, then tap 1/8 to 1/4 turn with a 20 oz (maximum) hammer to approximately 75 ft-lb (102 N•m).

8. Install suction tube (39) and coupled hose (42). Tighten nuts (37) and (B).



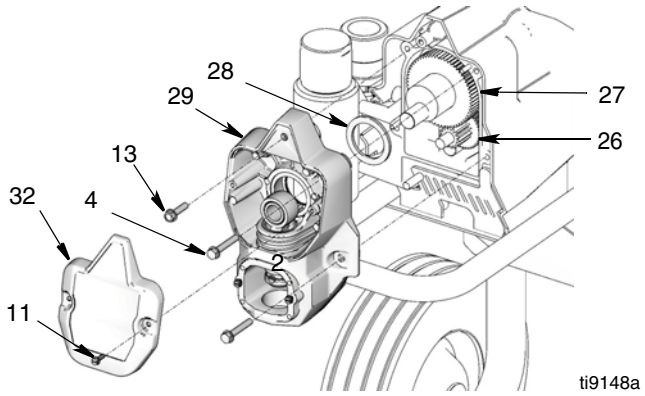
9. Fill packing nut with Graco TSL until fluid flows onto top of seal. Install pail hanger (10) with screws (11).



Drive Housing Replacement

Removal

1. **Relieve pressure**, page 6.
2. Remove pump (33). **Displacement Pump Replacement**, page 12.
3. Disconnect power cord from outlet.

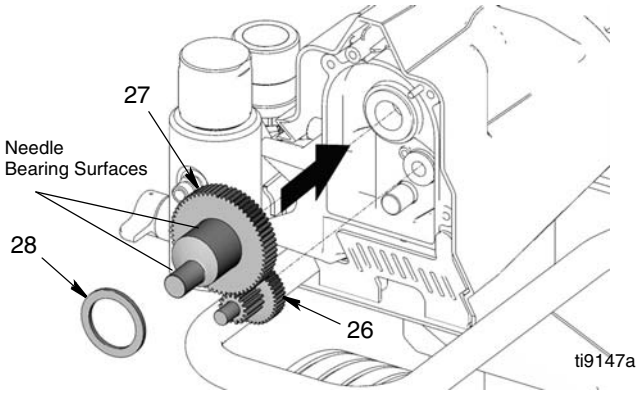


4. Remove two screws (11) and cover (32).
5. Remove screw (13) and four screws (4).
6. Pull drive housing (29) out of motor front endbell.
7. Remove gear cluster (27) and (26) and thrust bearing (28) from drive housing.

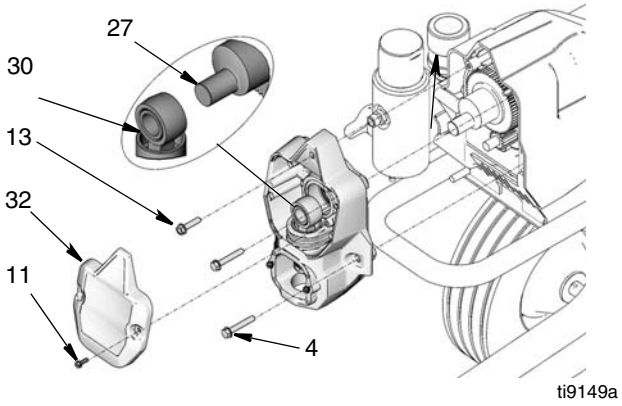
CAUTION
Do not drop gear cluster (27) and (26) when removing drive housing (29). Gear cluster may stay engaged in motor front endbell or drive housing.

Installation

1. Apply a liberal coat of grease to gears and needle bearing surfaces. Install thrust bearing (28) and gears (26) and (27) in motor front endbell.



2. Push drive housing (29) into motor front endbell. Insert gear crank (27) through hole in connecting rod (30).



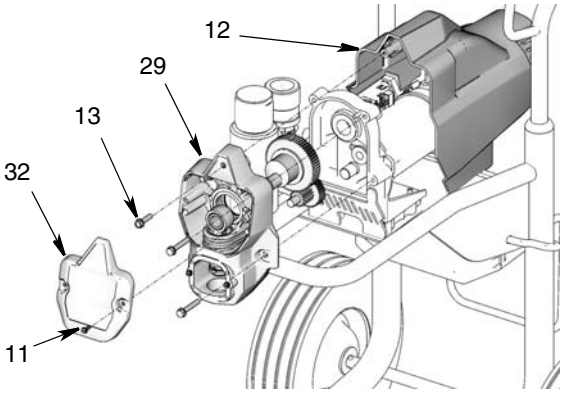
3. Install four screws (4) and screw (13).
4. Install cover (32) with two screws (11).
5. Install pump (33). **Displacement Pump Replacement**, page 12.

Spin Test

See Wiring Diagram, page 27.

To check armature, motor winding and brush electrical continuity:

1. **Relieve pressure**, page 6. Disconnect power cord from outlet.
2. Remove kick stand (66) on (210ES Series A).
3. Remove two screws (5) and toolbox (3) (190ES, 210ES Series A).
4. Remove two screws (11) and front cover (32).



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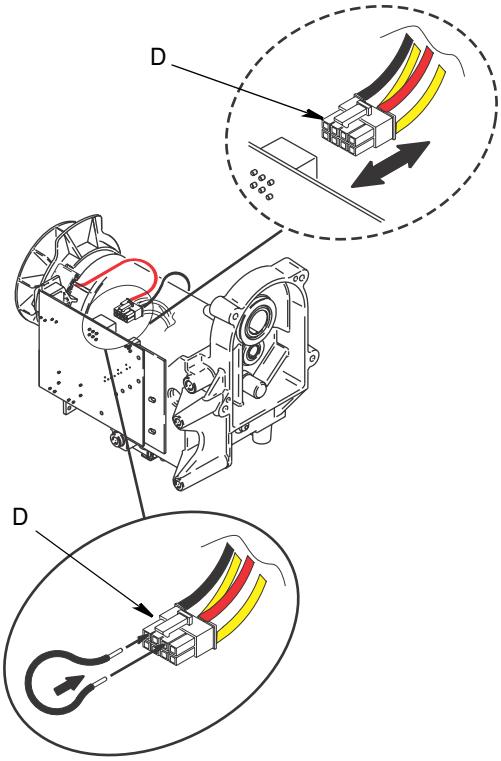
5. Remove screw (13) and shroud (12).
6. Remove drive housing (29), page 14.
7. Disconnect motor connector (D).

Armature Short Circuit Test

Quickly turn motor fan by hand. If motor coasts two or three revolutions before complete stop, there are no electrical shorts. If motor does not spin freely, armature is shorted. Replace motor, page 26.

Armature, Brushes, and Motor Wiring Open Circuit Test (Continuity)

1. Connect red and black motor leads with test lead. Turn motor fan by hand at about two revolutions per second.
2. If uneven or no resistance, check for missing brush caps, broken brush springs, brush leads, and worn brushes. Repair as needed, page 17.
3. If still uneven or no resistance, replace motor, page 26.



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4. Connect motor connector (D).
5. Install drive housing, page 14.
6. Install shroud (12) with screw (13).
7. Install front cover (32) with two screws (11).
8. Install toolbox (3) with two screws (5) (190ES, 210ES Series A).
9. Install kick stand (66) on (210ES Series A).

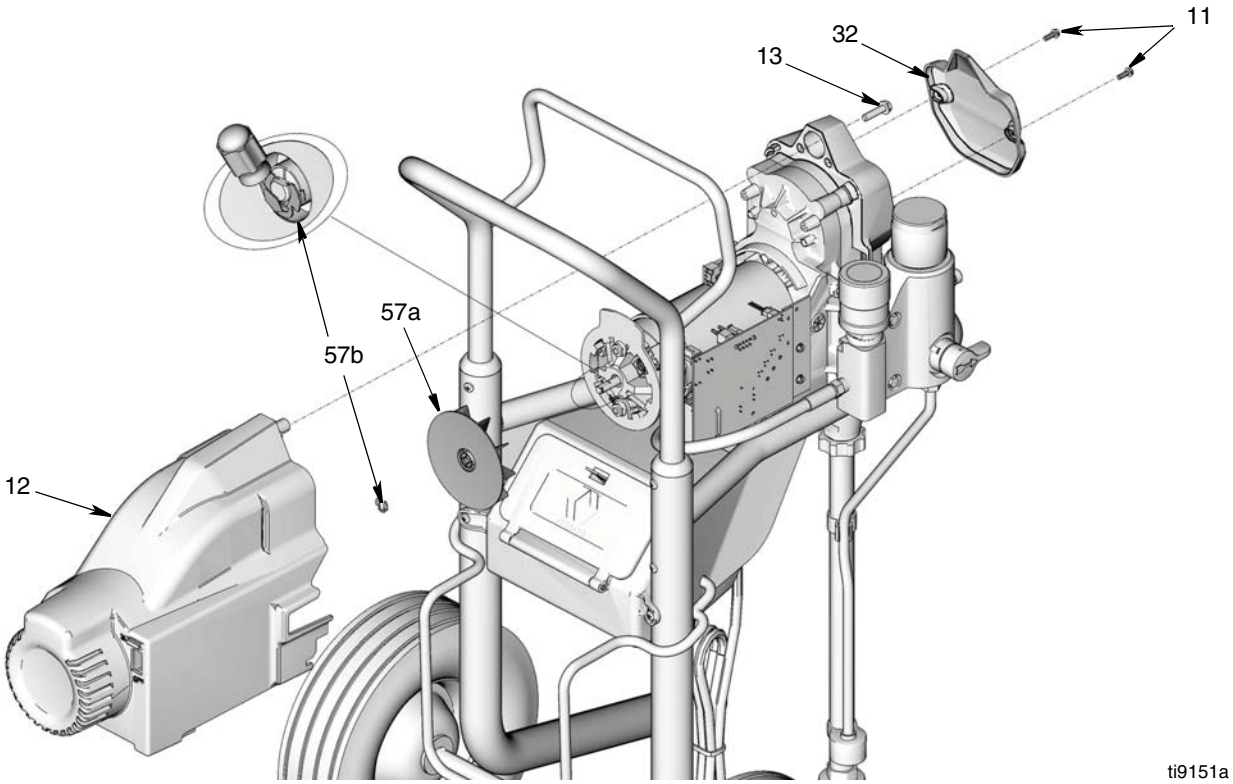
Fan Replacement

Removal

1. **Relieve pressure**, page 6. Disconnect power cord from outlet.
2. Remove kick stand (66) (210ES Series A).
3. Remove two screws (5) and toolbox (3) (190ES, 210ES Series A).
4. Remove two screws (11) and front cover (32).
5. Remove screw (13) and shroud (12).
6. Remove retaining ring (57b) on back of motor.
7. Pull off fan (57a).

Installation

1. Slide new fan (57a) on back of motor. Be sure fan blades face motor.
2. Install spring clip (57b).
3. Install shroud (12) with screw (13).
4. Install front cover (32) with two screws (11).
5. Install toolbox (3) with two screws (5) (190ES, 210ES Series A).
6. Install kick stand (66) (210ES Series A).



Motor Brush Replacement

See Wiring Diagram, page 27.

Removal

Replace brushes worn to less than 1/4 in. (6 mm). Brushes wear differently on each side of motor, check both sides.

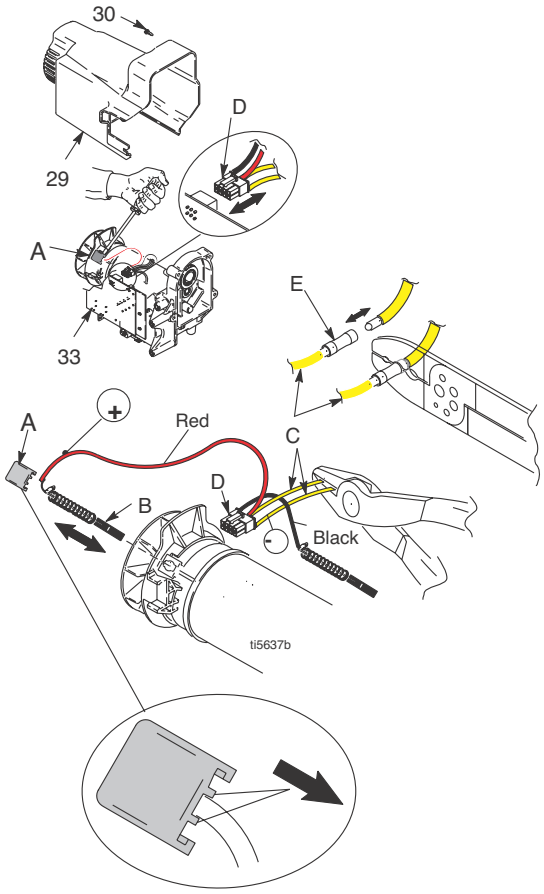
1. **Relieve pressure**, page 6. Disconnect power cord from outlet.
2. Remove kick stand (66) (210ES Series A).
3. Remove two screws (5) and toolbox (3) (190ES, 210ES, Series A).
4. Remove two screws (11) and front cover (32) (190ES, 210ES Series A).
5. Remove screw (13) and shroud (12) (see illustration on page 15).
6. Disconnect motor connector (D) from control board (18).
7. Cut tie wrap (F).
8. Locate two yellow wires (C). Cut each yellow wire at the center.
9. Pry off two brush caps (A). Remove brushes (B) from motor.
10. Discard old brush assembly.
11. Rotate fan by hand and blow compressed air into top brush holder to remove brush dust.

Place end of a shop vacuum hose over lower brush holder. Turn on shop vacuum when you blow compressed air into top brush holder.

Installation

Use all new parts included in brush kit. Do not reuse old parts if new replacement parts are provided.

1. Install new brushes (B) in motor with wires facing toward front of motor. Install positive (red) brush lead in top of motor and negative (black) brush lead in side of motor.
2. Push each cap (A) into place over brush. Orient each cap with the two projections on either side of the brush lead. You will hear a snap when cap is securely in place.
3. Strip approximately 1/4 inch (6 mm) of insulation from end of each yellow wire (C) from motor.
4. Insert stripped end into end of a butt splice (E) on new brush assembly.
5. Crimp ends of butt splice (E) around each wire. Pull gently on each wire to be sure wire does not pull out of butt splice.
6. Connect motor connector (D) to control board (18).



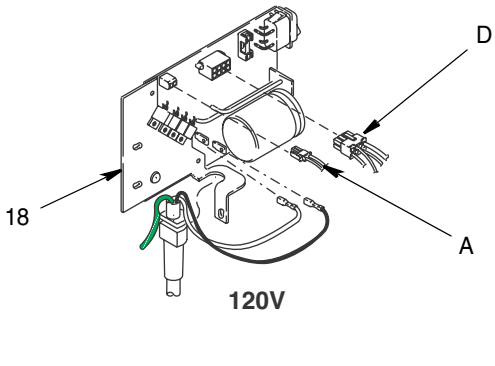
7. Install shroud (12) with screw (13) (see illustration, page 15).
8. Install front cover (32) with two screws (11).
9. Install toolbox (3) with two screws (5) (190ES, 210ES Series A).
10. Install kick stand (66) (210ES Series A).

Control Board Replacement

See Wiring Diagram, page 27.

Removal

1. **Relieve pressure**, page 6. Disconnect power cord from outlet.
2. Remove kick stand (66) (210ES Series A).
3. Remove two screws (5) and toolbox (3) (190ES, 210ES Series A).
4. Remove two screws (11) and front cover (32). Remove screw (13) and shroud (12) (see illustration, page15).
5. Disconnect pressure control assembly connector (A) from control board (18).



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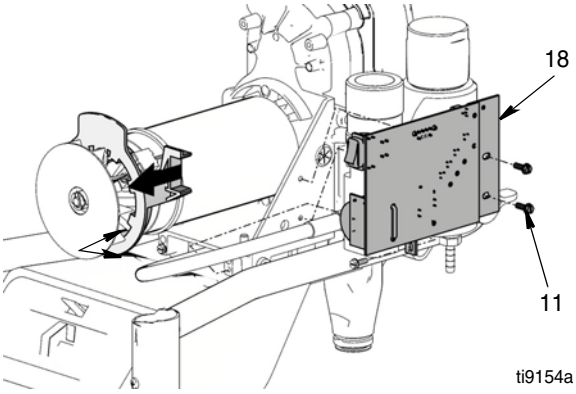
6. Disconnect motor connector (D) from control board (18).
7. Remove three screws (11) securing control board to housing (two are located on the front and one on the back next to the power cord).



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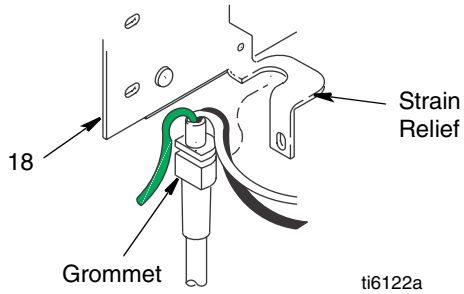
8. Pull control board out slightly and then slide control board back and off of frame.

Make sure power cord is free and not wrapped around cord wrap.

9. Remove grommet and wires from strain relief.

Ground wire remains attached to sprayer with grounding screw.



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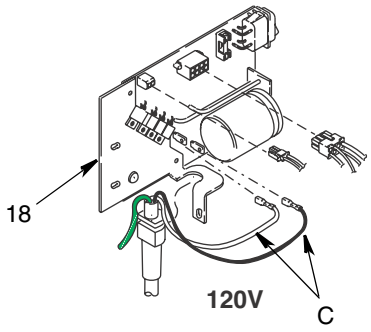
10. Remove two power cord (C) connectors from control board.



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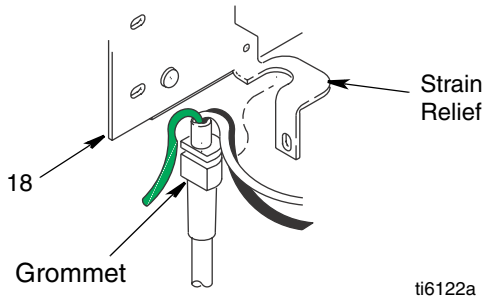
Installation

1. Push grommet and power cord wires into strain relief in control board (18).



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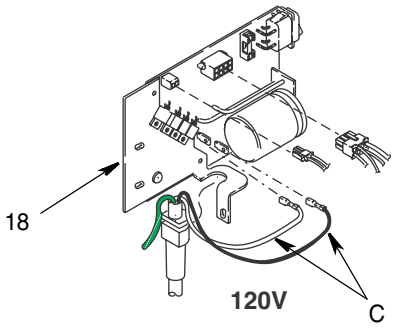
2. Connect power cord connectors to terminals indicated on control board (18).



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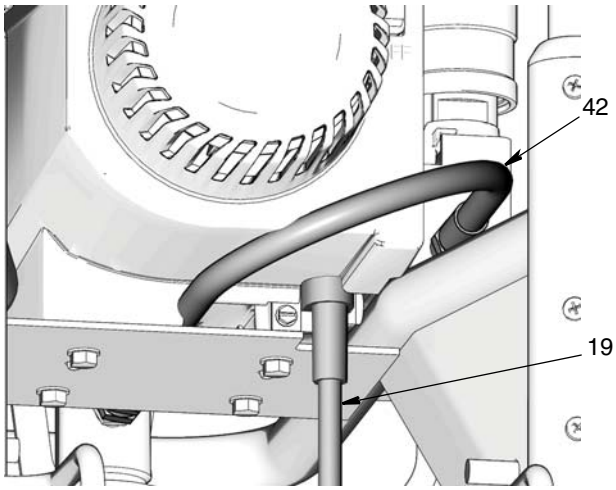
Route power cord (19) between coupled hose (42) to filter manifold and sprayer frame.



Bottom View of Sprayer

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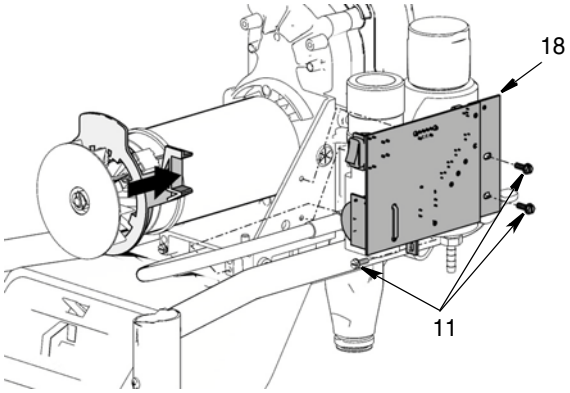
3. Slide control board into place on side of motor front endbell.



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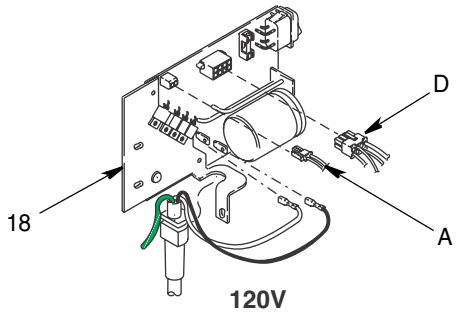
4. Replace three screws (11). Torque to 30-35 in-lb (3.4-3.9 N.m).



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5. Connect motor connector (D) and pressure control assembly connector (A).

6. Install shroud (12) with screw (13). Install front cover (32) with two screws (11). (see illustration, page 15).

7. Install toolbox (3) with two screws (5) (190ES, 210ES Series A).

8. Install kick stand (66) (210ES Series A).

Fuse Replacement

If the fuse is blown, check for:

- Pinched or shorted wires
- A defective motor (see Spin Test, page 15)
- A locked or frozen pump

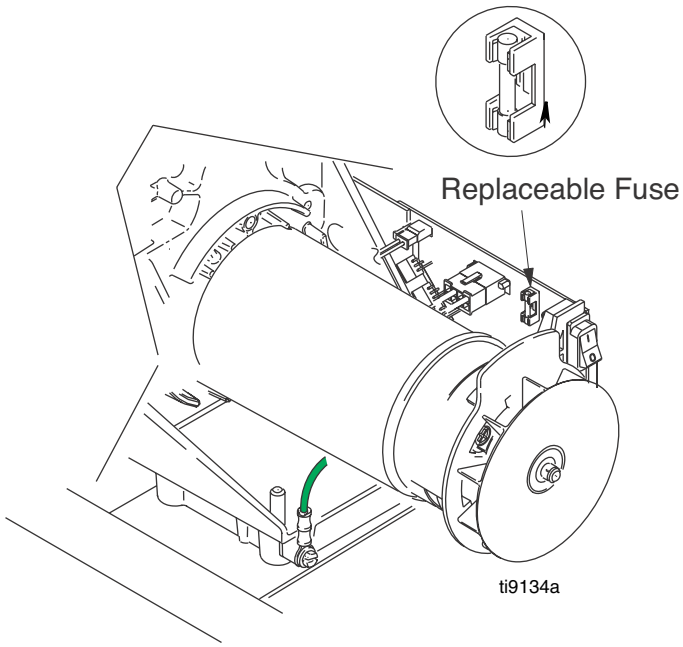
Correct defective condition before replacing fuse.

Removal

1. **Relieve pressure**, page 6. Disconnect power cord from outlet.
2. Remove kick stand (66) (210ES, Series A).
3. Remove two screws (5) and toolbox (3) (190ES, 210ES Series A).
4. Remove two screws (11) and front cover (32). Remove screw (13) and shroud (12) (see illustration, page15).
5. Remove fuse from control board.

Installation

1. Install Fuse 119277 on control board.
2. Install shroud (12) with screw (13). Install front cover (32) with two screws (11). (see illustration, page 15).
3. Install toolbox (3) with two screws (5) (190ES, 210ES Series A).
4. Install kick stand (66) (210ES Series A).

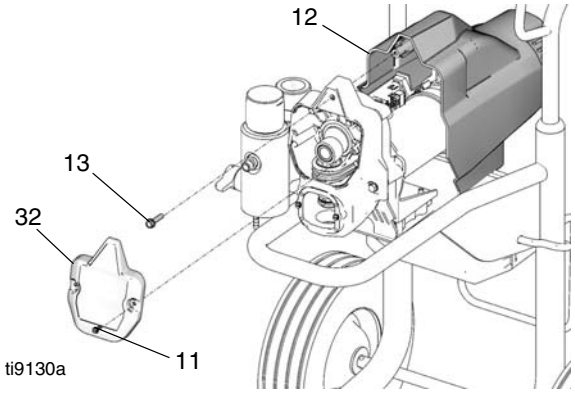


Pressure Control Assembly Replacement

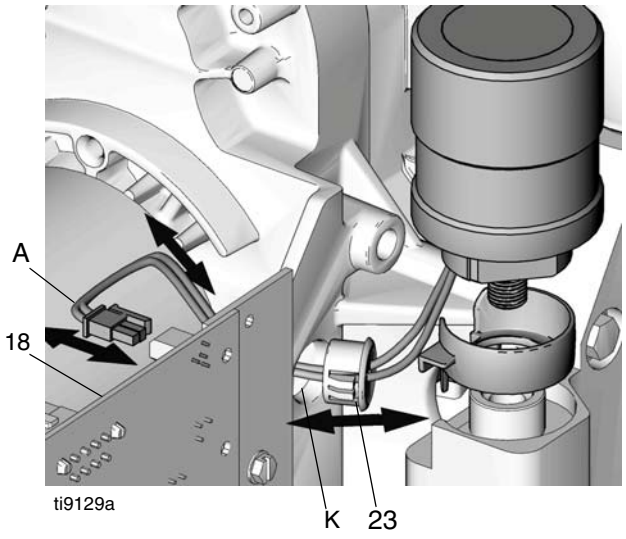
See Wiring Diagram, page 27.

Removal

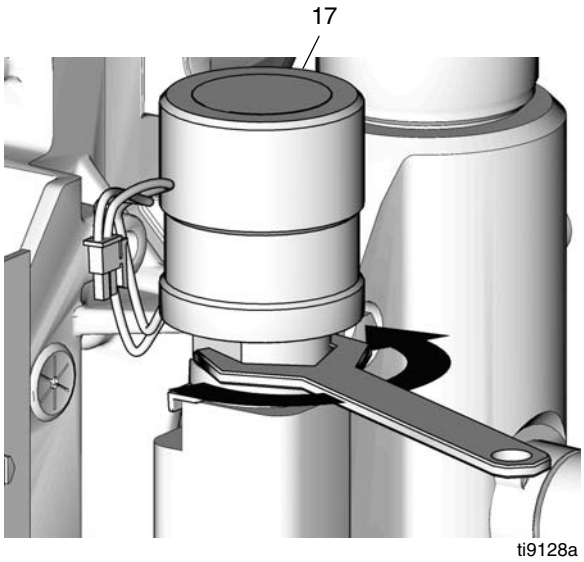
1. **Relieve pressure**, page 6. Disconnect power cord from outlet.
2. Remove kick stand (66) (210ES Series A).
3. Remove two screws (5) and toolbox (3) (190ES, 210ES Series A).
4. Remove two screws (11) and front cover (32).
5. Remove screw (13) and shroud (12).



6. Disconnect pressure switch connector (A) from control board (18). Pull bushing (23) from hole (K).



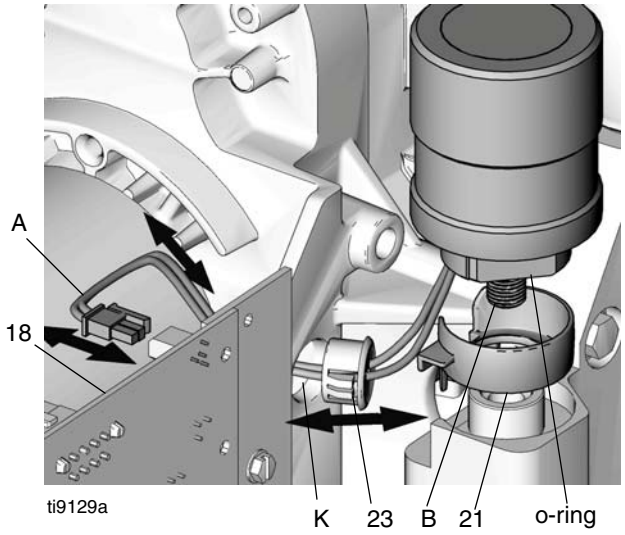
7. Pull wires through hole (K).
8. Turn pressure control knob (17) counter clockwise as far as you can to access flats on either side of pressure control.
9. Loosen and unscrew pressure control.



Caution
If you plan to reuse pressure control, be careful not to damage or tangle wires when unscrewing pressure control.

10. Remove pressure control.

Installation



1. Inspect pressure control before installation to verify o-ring is installed.
2. Align pressure control wire cap (21) on fluid manifold so opening faces toward motor.
3. Apply loctite to pressure control knob (B) threads.
4. Screw pressure control threads (B) into manifold and torque to 150 in-lb (17.0 N.m).

Caution
Be careful when tightening pressure control knob that wires are not pinched between pressure control and fluid manifold.

5. Tuck wires into pressure control wire cap (21) and route wires toward cap opening. Feed wires through housing hole (K).
6. Insert bushing (23) in hole (K).
7. Connect pressure switch connector (A) to control board (18).
8. Install shroud (12) with screw (13). Install front cover (32) with two screws (11). (see illustration, page 15).
9. Install toolbox (3) with two screws (5) (190ES, 210ES Series A).
10. Install kick stand (66) (210ES Series A).

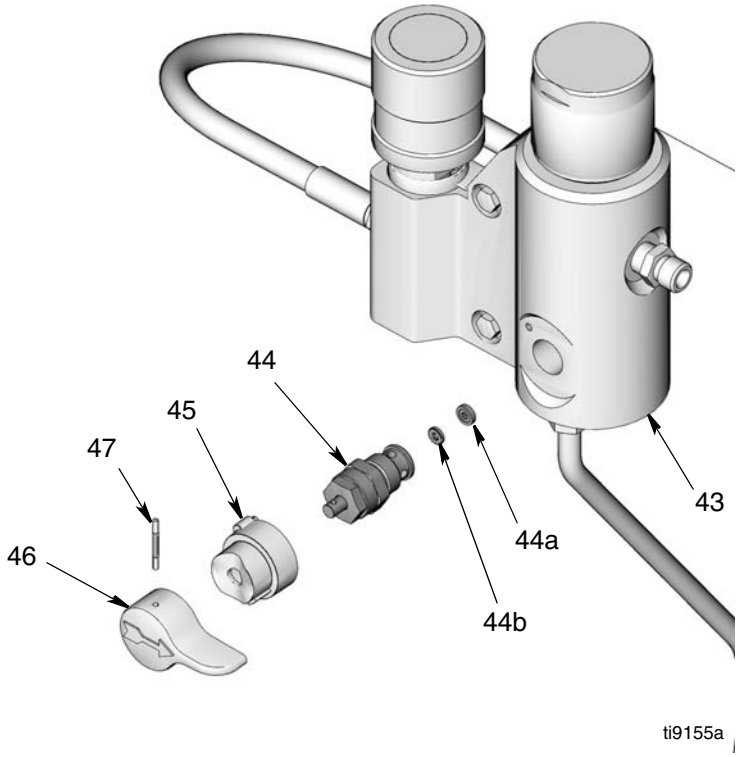
Drain Valve Replacement

Removal

1. **Relieve pressure**, page 6. Disconnect power cord from outlet.
2. Remove pin (47) from drain valve handle (46).
3. Pull drain valve handle and valve base (45) from drain valve (44).
4. Unscrew drain valve from filter manifold (43).
5. Remove valve seat (44b) and seat gasket (44a) from inside of filter manifold or end of drain valve.

Installation

1. Install new seat gasket (44a) and valve seat (44b) on end of drain valve.
2. Screw drain valve (44) into filter manifold (43). Torque to 120 to 130 in-lb.
3. Push valve base (45) over drain valve (44) and then valve drain handle (46) over valve base.
4. Install pin (47) in drain valve handle. If necessary, use a hammer to tap pin in place completely.



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Drain Line Replacement

Removal

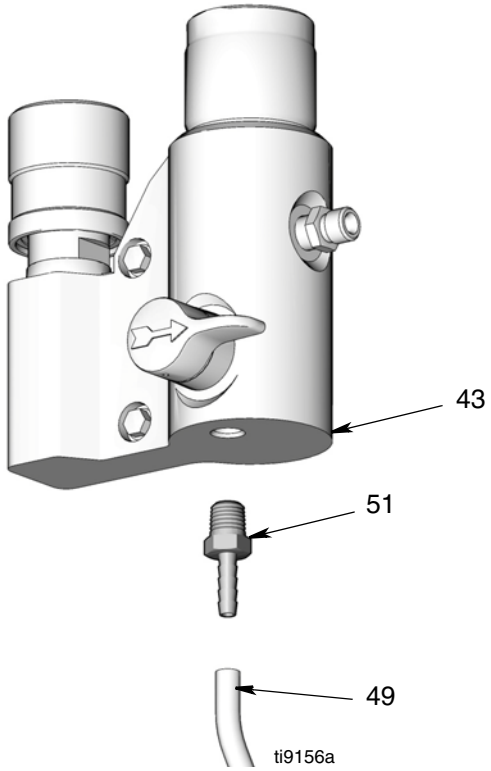
1. Cut drain line (49) from barbed fitting (51).
2. Unscrew barbed fitting from filter manifold (43).

To reuse existing barbed fitting (51) and drain line (49), cut and remove remaining drain line material from end of barbed fitting.

Installation

1. Screw barbed fitting (51) into filter manifold (43).
2. Push drain line (49) onto barbed fitting.

To make drain line more pliable and easier to install over barbed fitting, heat end of drain line (49) with a hair dryer or place end in hot water a few seconds.



Power Cord Replacement

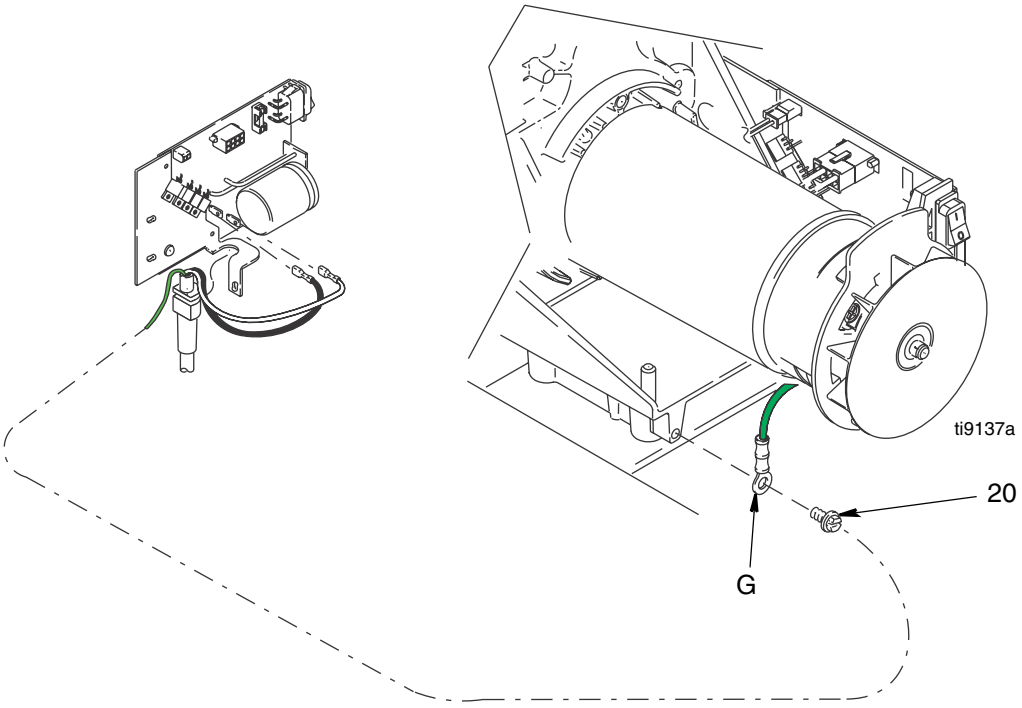
See Wiring Diagram, page 27.

Removal

1. Remove control board, **Control Board Replacement, Removal**, page 18.
2. Remove green ground screw (20) and disconnect green ground wire (G) from frame.

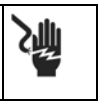
Installation

1. Connect green ground wire (G) to frame with green ground screw (20). Be sure green ground wire terminal faces up or wires could get caught in shroud.
2. Install control board, **Control Board Replacement, Installation**, page 19.



Motor Replacement

See Wiring Diagram, page 27.

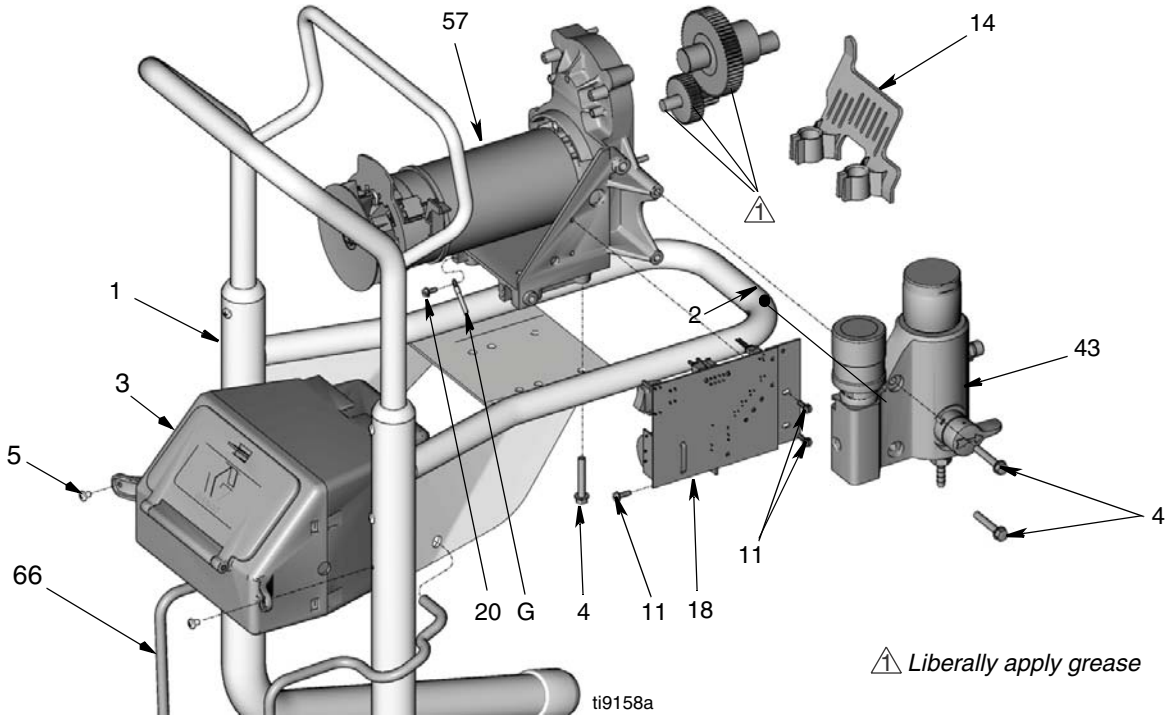
CAUTION
Do not drop gear cluster (27) and (26) when removing drive housing (29). Gear cluster may stay engaged in motor frontend bell or drive housing.

Removal

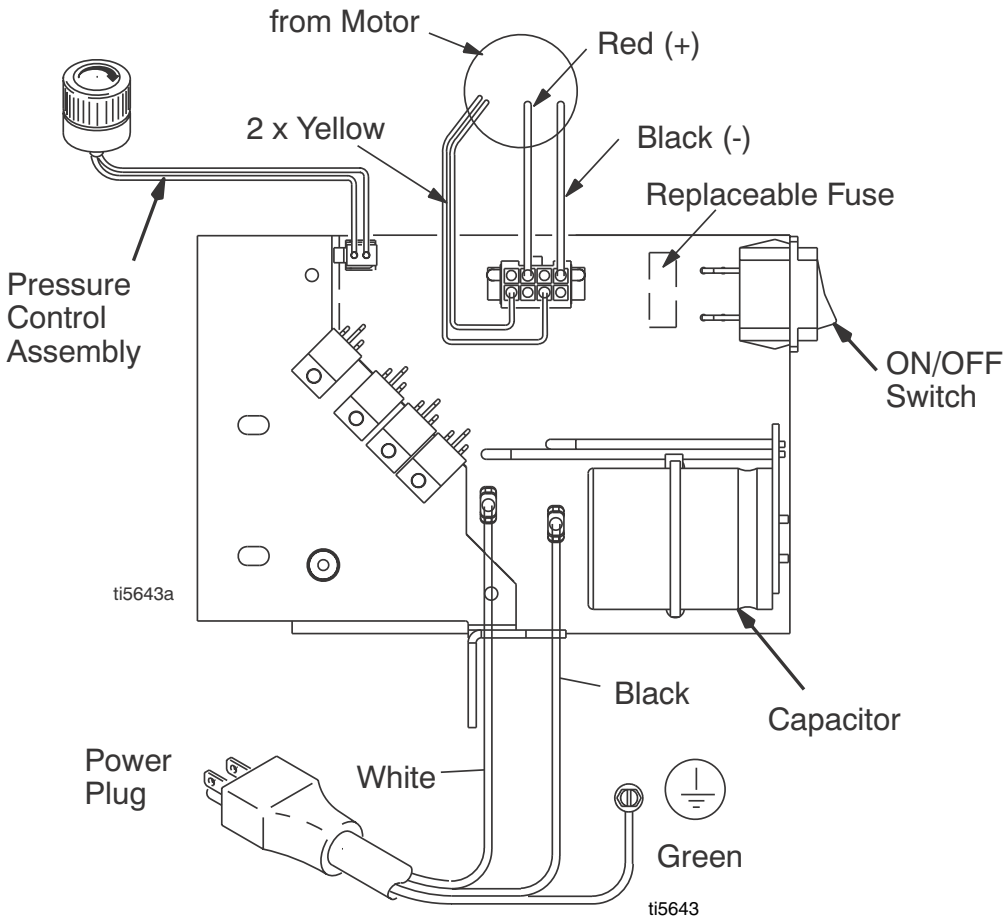
1. **Relieve pressure**, page 6. Disconnect power cord from outlet.
2. Remove kick stand (66) (210ES Series A).
3. Remove two screws (5) and toolbox (3) (190ES, 210ES Series A).
4. Remove pump, **Displacement Pump Replacement**, page 12.
5. Remove drive housing, **Drive Housing Replacement**, page 14.
6. Remove control board, **Control Board Replacement**, page 18.
7. Remove two screws (4) and filter manifold (43).
8. Remove green ground screw (20) and ground wire (G) from motor endbell.
9. Remove cover (14). Remove four screws (4) and motor (57) from frame (1).

Installation

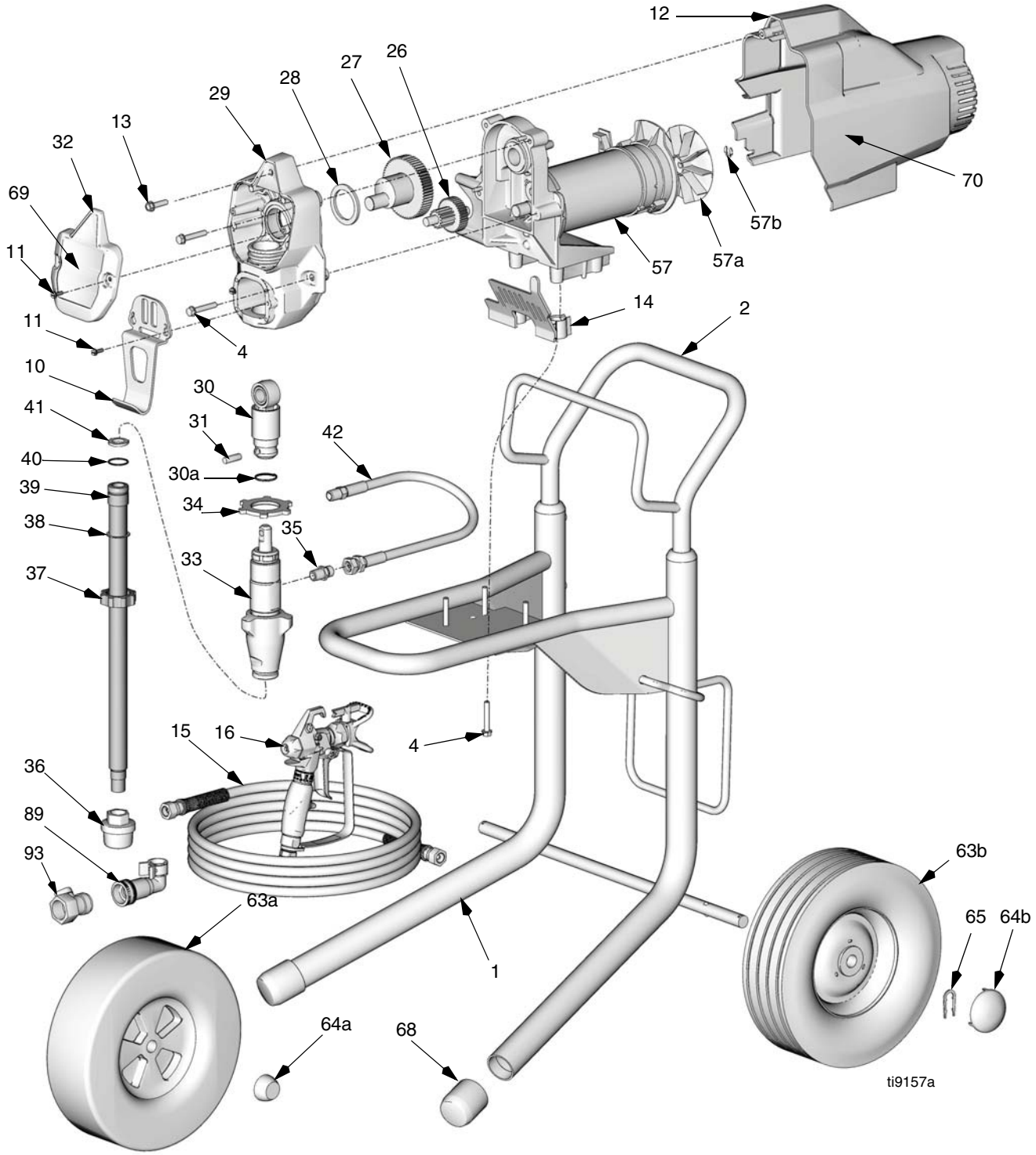
1. Install cover (14) on motor (57). Install motor on frame (1) with four screws (4).
2. Connect green ground wire (G) to frame with green ground screw (20). Be sure green ground wire terminal faces up or wires could get caught in shroud. (See illustration, page 25.)
3. Install manifold (43) with two screws (4).
4. Install control board, **Control Board Replacement**, page 18.
5. Install drive housing. **Drive Housing Replacement**, page 14.
6. Install pump. **Displacement Pump Replacement**, page 12.
7. Install toolbox (3) with two screws (5) (190ES, 210ES Series A).
8. Install kick stand (66) (210ES Series A).



120V Wiring Diagram



Parts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63a
64a
68
1
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16
30
31
30a
34
35
33
42
14
2
57
57a
57b
70
63b
65
64b
ti9157a

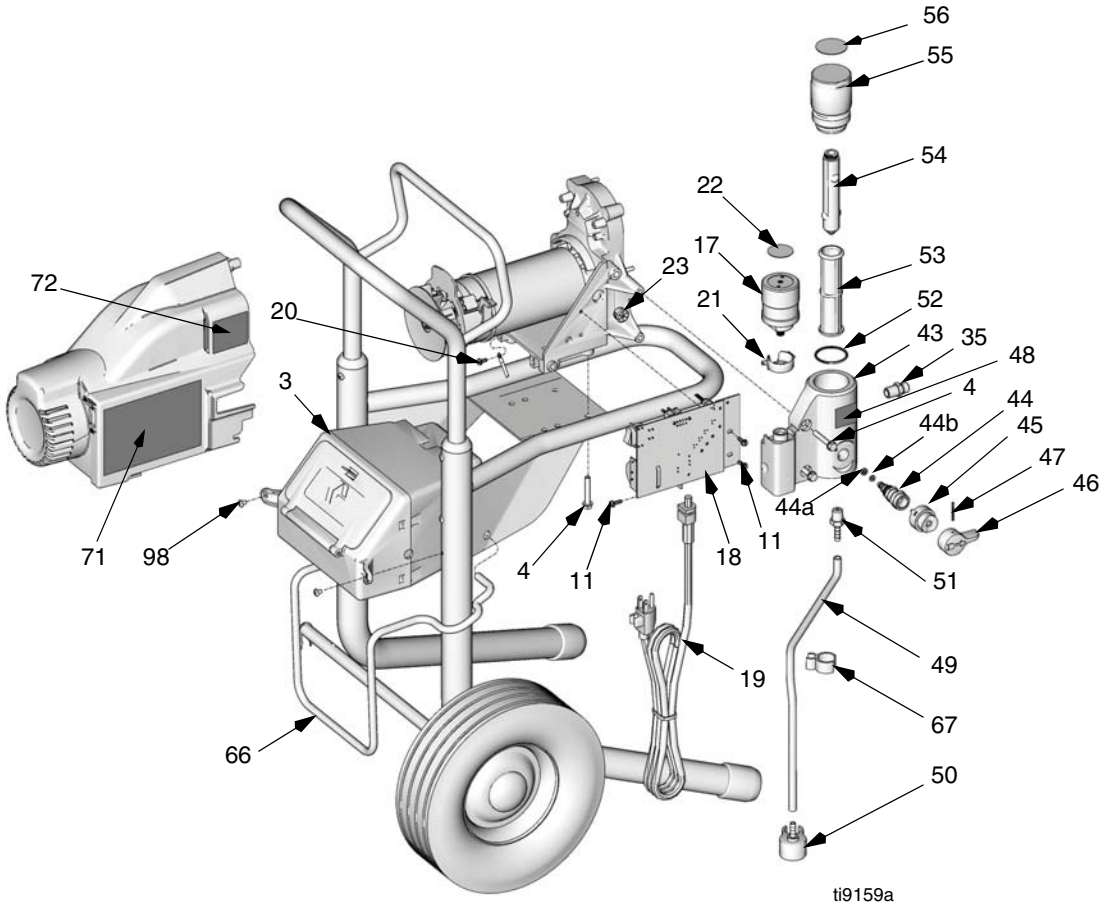
Parts List

Ref	Part	Description	Qty
1	288216	FRAME, cart, hi	1
2	287489	HANDLE, cart	1
4	117493	SCREW, mach, hex washer hd	10
5	109032	SCREW, mach, pnh	4
10	15J812	HANGER, pail	1
11	117501	SCREW, mach, slot hex wash hd	7
12	255165	SHIELD; includes 13, 71, 72	1
13	114531	SCREW, mach, hex washer hd	1
14	15J651	COVER, 210 / 190 ES	1
15	247340	HOSE, cpld, 1/4 in. x 50 ft	1
16	243012	GUN, spray, SG3	1
26	249194	GEAR, assembly, combination	1
27	287054	GEAR, crankshaft; includes 28	1
28	180131	BEARING, thrust	1
29	255168	HOUSING, drive; includes 4, 10, 11	1
30	287053	ROD, connecting; includes 30a, 31	1
30a	196750	SPRING, retaining	1
31	196762	PIN, straight	1
32	15E630	COVER, front	1
33	255198	PUMP, displacement; includes 35 Manual 312015	1
34	195150	NUT, jam, pump	1
35	162453	FITTING, (1/4 npsm x 1/4 npt)	2
36	245673	STRAINER, 3/4-16 unf	1
37	15E813	NUT, jam	1
38	15B652	WASHER, suction	1
39	15J801	TUBE, suction, intake	1
40	103413	O-RING	1
41	115099	WASHER, garden hose	1
42	15J744	HOSE, cpld	1
57❖		MOTOR, electric, 120V	
	255157	190 ES; includes 57a, 57b	1
	249040	210 ES; includes 57a, 57b	1
57a	249043	FAN, motor	1
57b	119653	RING, retaining	1
63		WHEEL, semi pneumatic	
	119451	190 ES	2
	106062	210 ES	2
64		CAP, hub	
	119452	190 ES	2
	104811	210 ES	2
65		CLIP, retaining	
	—	190 ES	0
	15B999	210 ES	2
68	15C871	CAP, leg	2
69		LABEL, front, brand	
	15K360	190 ES	1
	16P996	210 ES	1
70		LABEL, side, brand	
	15K361	190 ES	1
	16P997	210 ES	1
78	206994	FLUID, TSL, 8 oz (not shown)	1
89	288686	ADAPTER, power flush	1
93	115648	VALVE, shutoff	1

▲ Warning labels are available free of charge
❖ 249042 KIT, brush, motor

CJ Spray™

Parts Drawing



Parts List

Ref	Part	Description	Qty
3	288503	TOOL BOX, assembly (190ES, 210ES Series A)	1
4	117493	SCREW, mach, hex washer hd	10
11	117501	SCREW, mach, slot hex wash hd	7
17	255169	CONTROL, pressure, 120V; includes 21, 22, 23	1
18	249052‡	CONTROL, board	1
19	15J743	CORD, power, lighted, cart unit	1
20	115498	SCREW, mach, slot hex wash hd	1
21	15E794	CAP, wire, control, pressure	1
22	15A464	LABEL, pressure control knob	1
23	115756	BUSHING, universal	1
43	15J745	MANIFOLD, Filter, 190ES, 210ES	1
44	235014	VALVE, drain; includes 44a, 44b	1
44a	277364	GASKET, seat	1
44b	15E022	SEAT, valve	1
45	224807	BASE, valve	1
46	187625	HANDLE, valve, drain	1
47	111600	PIN, grooved	1
48	195811	LABEL, instruction	1
49	15K092	TUBE, drain	1
50	244035	DEFLECTOR, barbed	1
51	M70809	FITTING, barbed, hose	1
52	104361	O-RING	1
53	243080	FILTER, fluid	1
54	15E288	INSERT, manifold	1
55	15E289	CAP, filter	1
56	195707	LABEL, identification	1
66		ROD, kickstand	
	-	190 ES	0
	15J117	210 ES Series A	1
67	195400	CLIP, spring	1
71▲	15K359	LABEL, warning	1
72▲	195833	LABEL, warning	1
98	108795	SCREW, mach, pnh (190ES, 210ES Series A)	2

▲ Warning labels are available free of charge
‡ 119277 Fuse replacement

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Original instructions. This manual contains English. MM 311990

Graco Headquarters: Minneapolis,
International Offices: Belgium, Korea, China, Japan

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C.J. Spray, Inc.
6270 Claude Way E
Inver Grove Heights, MN 55076
1-888-CJSPRAY
(888-257-7729)